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STRATEGY FOR REDUCING THE MISSING OF APPOINTMENTS AMONG ADULTS ON ANTI-RETROVIRAL THERAPY IN LIMPOPO PROVINCE, SOUTH AFRICA

by

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DECLARATION

I, Lowane Mygirl Pearl**,** declare that the thesis entitled ***Strategy for reducing the missing of appointments among adults on Antiretroviral Therapy in Limpopo Province in South Africa*** is my own work. All the sources used or quoted have been indicated and acknowledged by means of complete references in the text and in the list of sources. This thesis has not been submitted previously for any proposed degree to any other university.

_____ _____

Lowane Mygirl Pearl **Date**

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DEDICATION

I dedicate this work and my accomplishment to :

- My late grandmother (JR Banyini-Baloyi);
- My children, Masingita and Ntombifuthi
- My grandson, Hlula
- My mother, Prof Khoza Base Lunic
- My siblings: Collins, Mr Gay, Sipho, Hatlane and Marie-Sarah
- all who supported me throughout the study.

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To God, my Lord who art in heaven, for the strength, wisdom and grace I have been receiving throughout my study. The lord who protected me during my travelling to various places for the purpose of this study.

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- My mother and my children, I thank you for your understanding and your support.

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LIST OF ABBREVIATIONS

AFSA	Aids Foundation South Africa
AIDS	Acquired Immunodeficiency Syndrome
AMS	Alive Medical Service
ARR	Adjust risk ratio
ART	Antiretroviral therapy
ARV	Antiretroviral
BOEM	Build, Overcome, Explore and Minimise
CAMs	Complementary Alternative Medicines
CCMDD	Centralised Chronic Medicines Dispensing and Distribution
CCMT	Comprehensive Care Management Therapy
CD4	T-lymphocyte cell bearing CD4 receptor
CHC	Community Health Centres
CHWs	Community Health Workers
DoH	Department of Health
DOT	Direct observed Therapy
DR EWI	Drug Resistance Early Warning Indicators
FGDs	Focus Group Discussions
HAART	Highly Active Antiretroviral Treatments
HAS	HIV/AIDS and STI
HCD	Higher Degree Committee
HCT	HIV counselling and testing
HIV	Human immunodeficiency virus
HIV+	Human immunodeficiency virus positive
HPRS	Health Patient Registration System
HTS	HIV Testing Services
I-ACT	Integrated Access to Care and Treatment
IDU	Intravenous Drug Use
IMB	Information Motivation Behaviour
IPA	Importance Performance Analysis
IRIS	Immune Reconstitution Inflammatory Syndrome
LTFU	Lost to Follow Up
MTCT	Mother-to-Child Transmission
NGO	Non-Government Organisation
NIM ART	Nurse Initiated Management of Anti-Retroviral Therapy

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NPO	Non-Profit Organisation
OAS	Outclient Appointment System
PESTEL	Political, Environment, Social, Technology and Legal
PHC	Primary Health Care
PICT	Provider Initiative Counselling and Testing.
PLWH	People living with HIV
PLWHA	Person living with HIV/AIDS
PMTCT	Prevention of Mother-to-Child Transmission
PN	Professional Nurse
RCT	Random Control Trails
RLS	Resource Limited Settings
RTC	Resource Training Centre
SDT	Self-Determination Theory
SES	Socioeconomic status
SMS	Short Message System
SOPs	Standard Operational Procedures
SSA	Sub-Saharan Africa
STI	Sexually Transmitted Infections
SWOT	Strength, Weakness, Opportunity and Threats
TB	Tuberculosis
TIER.net	Three Interlinked Electronic Register network
TRIC	Total Remaining in Care
TTM	Transtheoretical Model
UHDC	University of Venda Higher Degree Committee
UNAIDS	United Nations Programme on HIV/AIDS
UTT	Universal Test and Treat
VL	Viral load
WHO	World Health Organization

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ABSTRACT

Background: Since the introduction of three-tiered systems appointments, there are a large number of missed appointments among Human immunodeficiency virus-positive clients on Antiretroviral. However, no one knows why these clients missed their scheduled times. Missing of appointments predicts poor adherence and is associated with poor clinical outcomes.

Objectives: The proposed study aimed at developing a strategy for reducing the missing of appointments among adults on Antiretroviral Therapy in the Limpopo Province, South Africa. The objectives of the study are to determine patients' behaviour, the socio-environmental and economic factors that contribute to the missing of appointments and develop strategies to enhance compliance with appointments by Human immunodeficiency virus-positive clients on Antiretroviral therapy in the Limpopo Province.

Method: A qualitative research design was used to address the study objectives. Non-probability purposive sampling was used to sample health care centres in Limpopo Province, patients, Professional Nurses and Community Health Workers. Individual interview and focus group discussions strengthened the triangulation of data obtained from the participants. Creswell's model provided details for data analysis and interpretation.

Trustworthiness and Ethics: Measures to ensure data quality, such as credibility, dependability, conformability and transferability, were observed. The researcher ensured compliance with ethical standards to protect the rights of the participants. Approval for this study was obtained from the University of Venda Research Ethics Committee and the Limpopo Department of Health Research Ethics.

Results: The study revealed various factors that contribute to the missing of appointments by Human immunodeficiency virus positive-clients on Antiretroviral Therapy. Specific socioeconomic, behavioural, environmental and health service-related factors appear to prevent adherence to appointments. These factors include a lack of family support and client engagement, the absence of financial means, and cultural and religious beliefs. Lack of client involvement in planning their care and poor referral of clients to community health workers were ranked high as being the most contributing factors to clients missing their appointments.

Strategy development: Phase 2 of this study dealt with the development of the strategy aimed at reducing the missing of appointment by adults on Antiretroviral Therapy based on

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the findings of the study. The strengths, weaknesses, opportunities and threats matrix was triangulated in Political, Environmental, Social, Technological and Legal analysis to develop this approach to reduce the missing of appointments among adults on Antiretroviral therapy. A transtheoretical framework illustrated how to implement the strategy. Validation of the developed strategy ensured that the system is free of errors and checked the applicability of the strategies utilising a quantitative design. A simple random sampling approach was used to select the population to participate in this study using the questionnaire developed by the researcher. Almost all respondents agreed that the strategy would facilitate reduced missing appointments by adults on Antiretroviral therapy.

Recommendations: Clients involvement and engagement throughout the process of a treatment plan is essential to identify some of the barriers that might contribute to poor adherence to appointment by clients on Antiretroviral therapy. Community health workers and nurses should be capacitated with knowledge and skills to identify the clients at risk of defaulting treatment and appointments and provide counselling that will facilitate behaviour modifications.

Keywords: Adherence to appointment, Antiretroviral Therapy, Clients on Antiretroviral Therapy and missing of appointments

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This chapter outlines the background of the research, including the problem statement, the purpose and objectives presented in three phases and addresses the rationale and significance of the research study. The conceptual frameworks, which guided the study, will also be described in this chapter. Finally, there is an outline of the chapters and definitions of the key concepts.

1.2 STUDY BACKGROUND

For more than 20 years there have been rapid changes in the strategies and management of HIV infections including the roll out of antiretroviral therapy (ART). The roll out of anti-retroviral drugs (ARVs) began in 2005, with a target of one service point in all districts of South Africa. The criteria for receiving ARVs by then were determined by the patients' T-lymphocyte cell bearing CD4 receptor (CD4) counts of less than 200 copies/ml (UNAIDS, 2014). At that time, only a few people were eligible to receive ART services as compared to 25 million HIV-positive clients in Sub-Saharan Africa (SSA). The scale-up of ART in South Africa expanded on 1 December 2009, announced by the former president of South Africa (Mr Jacob Zuma) on World AIDS Day, citing as the reason that it would decrease the disease burden, maternal and child mortality and increase life expectancy. The eligibility criteria changed to include persons with ≤350copies/ml (National Department of Health [NDoH], 2015).

In South Africa, the number of Acquired Immunodeficiency Syndrome (AIDS) related deaths declined from 325,241 in 2006 to 150,759 in 2016, which changed the historical patterns of mortality rates in South Africa (Stats SA, 2016). Having realised the mortality rate decline and the increased life expectancy, in July 2014, South Africa's Minister of Health, Dr Aaron Motsoaledi, announced the increased threshold for ART initiation to a CD4 count of ≤ 500 copies/ml. However, pregnant women and breast-feeding mothers received ARVs regardless of their CD4 counts in an attempt to prevent Mother-to-Child Transmission (MTCT) (NDoH, 2015). HIV-related deaths continued to decline (NDoH, 2015). In 2016, the Universal Test and Treat (UTT) programme was announced and implemented from 1 September 2016. South Africa was the first African country to formally adopt the new UTT strategy, where all HIV-

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positive clients received ARV regardless of their CD4 counts, in trying to meet the set standard of HIV 90 90 90 strategies specified by the World Health Organization (WHO) (NDoH, 2017). Bain, Nkoke and Noubiap (2017) indicate that the Joint United Nations Programme on HIV/AIDS (UNAIDS) and partners launched the 90–90–90 targets in 2014 and further explain that the aim was to diagnose 90% of all HIV-positive persons, provide ART) for 90% of those diagnosed, and achieve viral suppression for 90% for those treated by 2020.

Since the beginning of ART enrolments, clients were registered on a paper-based register and were easy to monitor because they were few. Due to the increase of ART in high HIV burdened countries, many treatment sites were unable to monitor the large numbers of clients using only the paper-based systems (Osler Hilderbrand, Hennessey, Arendse, Goemaere, Ford & Boule, 2014; Osler & Boulle, 2010). This realisation led to the introduction of a three-tier approach. According to Myburgh, Murphy, Van Huyssteen, Foster, Grobbelaar, Struthers, Mclntyre, Hunter and Peters (2015), South Africa's NDoH adopted a three-tiered approach in 2010 for the monitoring and evaluation of the ART programme. Osler and Boulle (2010) mention that the electronic approach is flexible and user-friendly. The electronic systems generate the daily, weekly, monthly and quarterly reports needed for long-term routine monitoring of people on ART (Osler & Boulle, 2010). Once clients are entered in the TIER.net system, it is easy to identify whether they complied with their treatment plans or missed ART appointments, defaulted or LTFU.

This study focuses on the clients who missed appointments as it aims to develop a strategy to reduce the number of missed appointments among adults on ART. The researcher noted that missing of appointments is a common problem in Community Health Centres (CHCs) implementing ART in the Limpopo Province of South Africa. This fact was also supported by Perron, Dao, Michel, Kossovsky, Miserez, Chuard, Calmy and Gaspoz (2010) and Tan, Shah, De Souza, Harrison, Chettur, Onathukattil, Smart, Mata, Chitewe and Binley (2017) who indicate that failure to keep scheduled clinic appointments, in general, is reported as a common problem in health care settings worldwide. Alhamad (2013) argues that thousands of clients miss their appointments every year in all kinds of health care practices and little is known about which clients miss appointments or why they do so. Limited research has been conducted on the missing of appointments among ART clients. Most studies focused on adherence to treatment, that is, implying the taking of pills/medications for other chronic conditions. In most studies, the missing of appointments were hospital-based where the clients have appointments with physicians or for surgery (Alhamad, 2013).

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Alhamad (2013) defines the missing of appointments as when a client misses at least one prescheduled appointment with the general clinic. However, they added that if clients arrived later than the appointment time and were not seen, they were also classified as non-attended/having missed the appointment. Hunter (2010) and the WHO (2010) classified missing of appointments as early and late missed appointments. Early missing of an appointment implies missing appointments by 2-3 weeks, whereas late missing of appointments indicates missing appointments by 2-3 months after their scheduled dates (Nkambule, 2012).

However, Nkambule (2012) proposes that a client is classified as having missed an appointment if she or he is 3–7 days overdue. A client is classified as a defaulter if he or she is more than seven days overdue, but less than or equal to 90 days overdue in keeping a scheduled appointment. A client is classified as LTFU if he or she did not attend an HIV care centre for more than 90 days since the last attended appointment date (Nkambule, 2012). The WHO (2010), in the strategies to early warning indicators, concurs with the operational definition of appointment by Nkambule (2012) in that a person is regarded as having missed appointments if a person has missed his/her appointment by 2–7 days. If clients continuously miss their appointments for 90 days or more, they are then regarded as being LTFU. Figure 1.1 illustrates the classification of missed appointments.

Figure 1.1 Operational definitions of missed appointments (Nkambule, 2012)

In the primary care clinics of Geneva's University Hospitals, the rate of missed appointments was reported to be 22% during 2007 (Perron et al., 2010). A similar study was conducted at the Themba Lethu Clinic in Johannesburg, South Africa, to establish how many of their clients missed appointments during the first six months after starting ART. That retrospective study included 4,476 individuals, aged 18 and older, who started ART between April 2004 and August 2008. The study revealed that overall, 65% of the clients attended all their appointments, 26% missed one, 7% missed two and 2% missed three or more appointments (Carter, 2010). The investigators identified independent predictors of missing ART visits,

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including risk ratio [ARR] = 1.16; 95% CI, 1.05 to 1.28; ARV pick up [ARR] = 1.15; 95% CI, 1.15 to 1.28 and medical visits [ARR] = 1.18; 95% CI, 1.10 to 1.40 (Carter, 2010).

Another study conducted in Uganda revealed that out of 2,267 scheduled clinic appointments, 1.8% (n=40) of the clients missed their first and second follow-up visits. Out of 392 clients, in another setting, 92% (n=361) attended all appointments for their treatment refills. Clinic attendance for treatment refills was statistically significantly associated with medication adherence with regularly attending clients having four times the probability of achieving optimal (≥95%) medication adherence (odds ratio, 95% CI: 1.48 to 10.25, exact) (Kunutsor, Walley, Katabira, Muchino, Balidawa, Namagala and Ikoona, 2010).

Boruett, Kagai, Njogo, Nguhiu, Awuor, Gitau, Chalker, Ross-Degnan, Wahlström and Tomson (2013) in a study in Kenya found that intervention was critical in assisting clients to adhere to their appointment schedules. Also, appointment-keeping trends for new and experienced clients at both intervention and control facilities were relatively steady during the pre-intervention period. At the intervention site, an experienced client had a significant increase in both the level immediately after intervention yield (+5.7%; 95% CI = 2.1, 9.3) and the trend increase per month after the intervention yield (1.0% per month and 95% CI = 0.6, 1.5) of on-time appointments. Boruett et al. (2013) indicate observing similar changes in the rates of clients attending a clinic within three days of their scheduled appointments, with an increase in the level of attendance of 4.2% (95% CI = 1.6, 6.7), and a monthly trend increase of 0.8% (95% CI = 0.6, 1.1) (Boruett et al., 2013).

Although the increase in keeping appointments was also noted in the control group in both levels (+6.5; 95% CI = 1.4, 11.6) and trend (1.0% per month; 95% CI = 0.2, 1.8), after the intervention for experienced clients attending the clinic, attendance within three days of their scheduled appointments also improved. Among newly-treated clients, there was an immediate significant increase in the percentage of clients attending clinics on time (8.8% 95% CI = 1.2, 16.3) in the intervention cohort, but no significant change in trend or any other outcome variable in this client group (Boruett et al., 2013).

Missed appointments predict incomplete adherence among ART clients (Perron et al., 2010). Access to health care centres is jeopardised when clients miss scheduled appointments as this also interferes with the appropriate care of acute and chronic health conditions and wastes medical and administrative resources (Perron et al., 2010). Alhamad (2013) and Nkambule (2012) further point out that the missing of appointments has serious clinical and economic impacts because of the disrupted continuity of client care, delayed treatments, affected doctor-client relationships and increased costs for CHCs. The non-attendance of clinic appointments

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impacts negatively on client care, because clients may lose the opportunity to receive treatment or be screened for specific illnesses (Alhamad, 2013).

Missed appointments exert a huge strain on the system and prolong booking and waiting times at the clinic for other clients affecting the quality of care (Alhamad, 2013). Clients who usually miss their appointments end up interrupting treatment, becoming LTFU and increasing the number of AIDS-related deaths (Alhamad, 2013). Furthermore, the non-attendance of prescheduled appointments adds to the frustrations of health care providers who already have difficulty in managing the client loads at the clinics (Alhamad, 2013).

According to Carter (2010), missing multiple clinic appointments, soon after starting ART, is associated with poor immunological, clinical and virological responses, and thus increases the risk of AIDS-related deaths. This might also lead to suboptimal use of clinical and administrative staff, increase waiting times for other clients, and affect the continuity of care. According to Carter (2010), South African investigators reported that clients who had failed to attend the clinic on two or more occasions during the six months after starting ART had poorer outcomes than those who kept all their appointments. Carter (2010) further commented: 'Missing visits early is a marker for those who will have poorer outcomes even if returning to care'.

Conradie, de Oliveira, Basson and Hunt (2012) highlight that if ARV levels become suboptimal, the risk of developing ARV drug resistance increases due to the high rate of HIV replication causing virologic failure. Continuation of failing ART regimens could affect both the treated individual and community, as resistant viral strains could be transmitted to others in the community (Conradie et al., 2012).

If a person interrupts treatment, the chances of increased viral loads and mutations are high, possibly leading to drug resistance (Meintjes, Moorhouse, Carmona, Davies, Dlamin, Van Vuuren, Manzini, Mathe, Moosa, Nash, Nel, Pakade, Woods, Van Zyl, Conradie & Venter, 2017). The WHO (2012) indicates that between 2003 and 2010, drug resistance reached a peak of 6.6% in 2009. In 72 surveys conducted between 2004 and 2010 by the WHO on drug resistance, 20 (28%) of these surveys reported moderate drug resistance (WHO, 2012). The proportion of the surveyed areas reporting moderate levels of transmitted drug resistance, increased from 18% in 2004–2006 to 32% in 2007–2010 (WHO, 2012).

South Africa has strategies for involving clients before ART enrolment. These strategies include adherence counselling and Integrated Access to Care and Treatment (I-ACT) (NDoH,

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2015). These two strategies aim to prepare and educate clients who will be taking lifelong ARVs to achieve better treatment outcomes. Despite these initiatives, HIV-infected clients continue to miss appointments, resulting in defaulters and eventually LTFU (Enriquez & McKinsey, 2011). According to the operational definition (Nkambule, 2012), there is a relationship between missing appointments, defaulters and LTFU clients.

Not all clients who miss appointments become LTFU as some miss ART appointments but remain active in the TIER.net system. In the case of the Limpopo Province, Makghato (2015) indicated that all the districts of Limpopo Province had challenges with missing appointments within the first three months of ART initiation. This emphasises the need to investigate ART clients' missing of appointments and compile a strategy to reduce the missing of appointments among adult ART clients in the Limpopo Province.

1.3 PROBLEM STATEMENT

South Africa's NDoH ensures that all clients living with HIV/AIDS have access to ART to improve their quality of life and life expectancy. All ART clients receive extensive individual counselling from trained health care professionals. Clients receive return dates documented in a client-retained card at each visit. Despite these efforts, clients still do not honour their scheduled appointments, and little is known as to why some clients miss their ART appointments.

To identify the magnitude of the problem, the researcher used the data from one district in the Limpopo Province. The report, generated from TIER.Net of Mopani District, revealed that by the end of 2016, there were 89,567 clients on ART and 51% (n=456320) missed their appointments within one month of the review. Data generated from the TIER.net system in March 2017, revealed that out of the 45,632 ART clients, 63% (n=28748) missed two or more appointments within 12 months of ART initiation.

1.4 RATIONALE FOR CONDUCTING THE STUDY

Although South Africa has suitable strategies for accessing ARVs in health facilities and at various pick-up points, clients continue to miss their appointments, but little is known about the clients' reasons for missing these appointments. Most studies focus on the challenges of adherence to Highly Active Antiretroviral Therapy (HAART) where the emphasis is mainly on how to take medications, the side effects, the consequences of skipping medication doses,

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barriers affecting clients' taking of medications and strategies to improve adherence to medication. The researcher notes a gap in the literature focusing on the missing of appointments by ART clients and strategies to resolve the challenges of missed appointments by ART clients. Consequently, the current study intends to develop a strategy that could reduce ART clients' missing of their appointments.

1.5 SIGNIFICANCE OF THE STUDY

The findings of this study will be used to develop a strategy for enhancing the reduction of missed appointments among adult ART clients by assisting clients to adhere to their appointments. Continuously missing ART appointments correlates with poor clinical, immunological and virological outcomes. Antiretroviral Treatment regimens, other than first-line ARVs, become more complex and expensive to manage, emphasising the importance of keeping appointments and adhering to treatment to prevent resistance to first-line ARVs. ART clients who miss appointments can become completely lost to the system and die from AIDS-related illnesses. Hence, a strategy for keeping ART appointments to be developed based on the current study's findings is required to prevent the complications and consequences caused by adult ART clients' failure to keep their appointments. Furthermore, the study should provide an understanding as to why ART clients miss appointments from the behavioural and socio-environmental points of view. This knowledge will promote an understanding as to how adult clients could be helped to adhere to their ART appointments and treatment plans.

The study will also address the gaps identified in health care providers' management of adult ART clients. In doing so, client-provider support could be enhanced, motivating clients' desire to adhere to behavioural changes and participate fully in the decision-making affecting their treatment plans. Health care providers will be trained in the implementation of strategies required during counselling to minimise adult ART clients' missing of appointments.

The NDoH could also benefit from this study's findings as the health care providers will render holistic services to clients, reducing the number of clients who miss appointments, and clients involvement will also be strengthened, It might also reduce treatment interruptions by retaining more clients on ART. Clients' outcomes will improve, and HIV-related deaths may decrease and will save costs by reducing the department's expenses incurred in tracing ART defaulters.

The recommendations of this study may assist policymakers in shaping a coordinated and focused national policy in support of client-provider care. Ultimately, the policy should help

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health professionals to acquire and maintain skills related to client-provider care and encourage organisations to cultivate a culture of client-provider care. Reductions in missed appointments will also benefit the Limpopo Province to achieve the second and third WHO HIV 90 90 90 strategy's goals, where most clients will adhere to ART and remain in care.

The Limpopo Province will benefit from this study as the strategy developed by the current study's findings, may assist in decreasing the number of missed appointments, thereby reducing ART patients who are LTFU and clients switching from first-line to second- and third-line regimens.

1.6 PURPOSE OF THE STUDY

The purpose of this study was to develop a strategy for reducing missing of appointments among adult ART clients in the Limpopo Province, based on the clients' identified reasons for failing to keep their ART appointments.

This study was guided by the following objectives and included three phases:

Phase 1: Empirical phase

- Describe the behaviour of adult ART clients that contribute to missing of appointments in the Limpopo Province.
- Describe the socio-economic and environmental factors that contribute to missing of appointments by adult ART clients in the Limpopo Province.
- Explore health service-related factors that contribute to missing of appointments by adult ART clients in the Limpopo Province.
- Explore the strategies from adult ART clients, PNs and CHWs that might address the challenges of missing of appointments.

Phase 2: Strategy development

- Develop a strategy for enhancing compliance with ART appointments in the Limpopo Province.

Phase 3: Validation of the developed strategy

- Validate the developed strategy for reducing the missing of appointments among adults on ART in the Limpopo Province.

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1.7 THE STUDY'S CONCEPTUAL FRAMEWORK: THE INFORMATION MOTIVATION BEHAVIORAL SKILLS MODEL (IMB) AND THE TRANSTHEORETICAL MODEL (TTM)

The proposed study was guided by two models, namely the Information Motivation Behaviour (IMB) Skills Model and the Transtheoretical Model (TTM).

1.7.1 Information Motivation Behavioural Skills (IMB) Model applied to the clients' adherence to Antiretroviral Therapy

The IMB Skills Model applies to the adherence to ART forming the theoretical foundation and conceptual framework and assisting the researcher in investigating and establishing the behavioural determinants of adult clients' missed ART appointments. The IMB is a comprehensive model for retaining high levels of adherence to ART appointments, preventing therapeutic failure and deterioration of clients' health status, and avoiding the development of multidrug-resistant HIV transmitted to others in the communities.

Fisher, Fisher, Amico and Harman (2006) state that the IMB model could be used to understand, predict and promote adherence therapy. The IMB model focuses on information, motivation and behavioural skills as factors conceptually and empirically linked to adherence, specifically situational and personal factors and includes the fundamental determinants of ART adherence. The IMB model is based on a generalised IMB approach for understanding and promoting health behaviour validated extensively over a decade of correlational and experimental research concerning HIV-related behaviours (Fisher et al., 2006).

At its most general level, the IMB model asserts that if ART clients possess adherence-related information, motivation and behavioural skills to act effectively, they will be more likely to adhere to scheduled appointments and reap the substantial health benefits. However, if adult ART clients are poorly informed, unmotivated and lack the behavioural skills required to act effectively, they are unlikely to adhere to scheduled appointments and also unlikely to experience the relevant health benefits of ART (Fisher et al., 2006). Adhering to clinic appointments is a behaviour. Hence, the IMB skills model of adherence to ART was considered to assist in the development of the strategy to be used to reduce the missing of appointment among adult ART clients in the Limpopo Province.

1.7.2 The Transtheoretical Model (Stages of Change Model)

The Transtheoretical Model (TTM - also called the Stages of Change Model), developed by Prochaska and Di Clemente in the late 1970s, evolved through studies comparing the

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experiences of smokers who quit on their own with those requiring further treatment to understand why some people were capable of quitting on their own. It was determined that people quit smoking if they were ready to do so. Thus, the TTM focuses on the decision-making of the individual and is a model of intentional change. The TTM operates on the assumption that people do not change behaviours quickly and decisively (Prochaska & Velicer, 1997). Instead, changes in behaviour, especially habitual behaviours, occur continuously through a cyclical process. The current study adopted this model because it applies to adult ART clients who tend to miss their scheduled appointments.

Missing ART appointments is considered as being illegal health behaviour that affects the health of the person and increases the burden of health services. According to Prochaska and Velicer (1997), the TTM posits that health behaviour change involves progress in six stages of change through which the individual should move. The six stages involve pre-contemplation, contemplation, preparation, action, maintenance and termination (Prochaska & Velicer, 1997). The stages of the model rapidly expanded in scope to include investigations and applications with a broad range of health and this medication compliance amongst other things. Over time, these studies have applied, expanded, validated, and challenged the core constructs of the transtheoretical model (Prochaska & Velicer, 1997).

Prochaska and Velicer (1997) explained the precontemplation is the stage where people are not intending to take action in the foreseeable future. Both groups tend to avoid reading, talking, or thinking about their high risk behaviours. They are often characterized in other theories as resistant or unmotivated clients or as not ready for health promotion programs. Both the clients, professional nurses and community health workers in this stage may not be aware that their behaviours can contribute to the missing of appointment. The second stage of Prochaska and Velicer (1997) stipulate that once the individual identified the problems, they begin to modified it. This stage further highlight that people are more aware of the pros of changing but are also acutely aware of the cons. As a result they intend to change.

The third stage implies that people are preparing themselves to take an action to improve the current state. They come with some plans how to start preparing for behavioural changes and modification. By so doing they are preparing for the plan of action, which is the fourth stage of the transtheoretical model. Once the plan of action is executed, people need to work towards maintaining and sustaining it. Maintaining is the fifth stage of transtheoretical model which implies that one the behaviours has been corrected, people need to sustained it. This will assist in improving the missing of appointments, defaulters and improve adherence among ART clients.

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The last stage of Prochaska and Velicer (1997) is the termination stage where it implies that once people's behaviour has been changes individuals have zero temptation and 100% self-efficacy. No matter whether they are depressed, anxious, angry, or stressed, they are sure they will not return to their old unhealthy habit as a way of coping.

These stages of change are summarised in Figure 1.2.

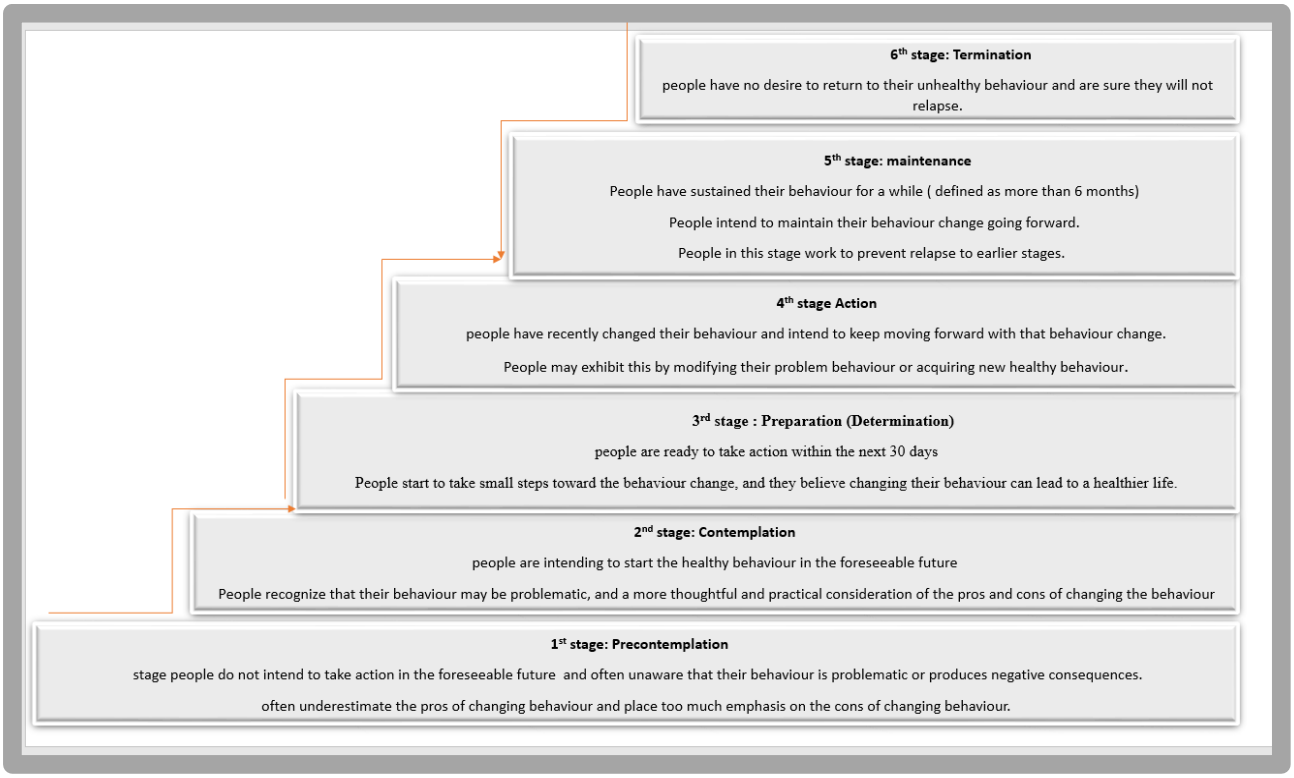

Figure 1.2 Summary of Transtheoretical Stages of Change (Prochaska & Velicer, 1997)

The TTM provides suggested strategies for public health interventions to address behavioural changes of individuals at various stages of change implementation. Individuals need to make informed decisions about their health. The IMB model implies that for a person to change, he/she must have the information to facilitate change and motivate him/her to take the appropriate actions. Consequently, these two theories apply to the current study.

The IMB model guided this study in the process of data collection to explore the main challenges contributing to the missing of ART appointments by adults and in the development of the strategy to reduce adults' missed ART appointments in the Limpopo Province. However, the TTM was used to show the possible implementation of the strategy in Chapter 6.

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1.8 DEFINITIONS OF KEY TERMS

Antiretroviral Therapy (ART) is a combination of drugs used to treat HIV, slowing down the replication of the virus and reducing its impact on the body (Volberding, Greene, Lange & Sewankambo, 2013). WHO (2013) added by indicating that ART consist of at least three Antiretroviral (ARV) drugs to maximally supress and stop progression of HIV diseases. In the current study, ART refers to the holistic management of HIV-positive clients initiated on ARVs.

Adherence to appointments means returning to the health facility precisely on the date and time scheduled (Kimeu, Burmen & Guitierrenm, 2016). In the current study, adherence to appointment refers to coming to the health facility on the given return date or within seven days after the initial date.

Missing of appointments refers to the clients who did not come on the scheduled date but reported between two days and three months later (WHO, 2015). In some studies, missing of an appointment is referred to as a no show, non-attendance or non-adherence. In the current study, missing appointments refers to clients who did not return to the health facility on the date given and the mentioned synonyms will be used interchangeably in this thesis.

Clients refer to persons utilising social or medical services (Stevenson, 2010). In this study the word 'adult ART client' refers to an HIV-positive adult aged 18 or older, receiving ART at a health facility in the Limpopo Province. Most health services use the term 'patient'. Therefore, the words client and patient will be used interchangeably in this thesis.

Clinic refers to an establishment or hospital department where outpatients receive medical treatment or advice, especially specialised services (Stevenson, 2010). In this study, a clinic is a Primary Health Care (PHC) facility where clients receive medical services as outpatients. The word clinic also involves CHCs that are the current study's focus.

Community health worker is being defined by WHO (2018) as the members of a community who are chosen by community members or organisations to provide basic health and medical care to their community and they capable of providing preventive, promotional and rehabilitation care to these communities. In this study, community health workers play a similar role defined by WHO (2018) including caring for chronic clients in the community where HIV positive clients are inclusive.

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Family refers to a group of people who are related to each other, especially parents and their children.. In the present study, family refers to all the structures related to each other including the spousal partnership.

Strategy is a plans made to reach a long-term aim (Wehmeier, Mcintosh,Turnbull & Asshby, 2010) In this study, strategy refers to plan of actions designed to achieve a long-term goal, that will be reducing the missing of appointment among adult clients on ART.

1.9 OVERVIEW OF THE CHAPTERS

Table 1.1 indicates the overview of each chapter in the research thesis.

Table 1.1: Overview of thesis chapters

Chapter 1	**Presented the Overview of the study which included the background, problem statement, rationale for conducting the study, significance of the study, the purpose of the study, conceptual frameworks (information motivation behavioural skills and transtheoretical model).summary of methodology and definitions of terms.**
Chapter 2	**Presented literature review which entails searching, finding, reading, comprehending and reaching conclusions about the published research and related theories concerning the topic of the study.**
Chapter 3	**Involved research methods, research design, research setting, population, sampling, data collection methods and instrument and data analysis and how the strategy will be developed**
Chapter 4	**Presented the findings from the individual interviews conducted with ART clients and PNs, as well as from the FGDs conducted with CHWs. Themes and subthemes emerged. A literature control relevant to the current study's findings incorporated and verbatim quotations from the participants.**
Chapter 5	**Presented the contextualisation of the findings applying the IMB skills model, followed by a SWOT analysis to evaluate the data from the participants and later develop the strategy.**
Chapter 6	**Discussed on how the developed strategy will be implemented in the health facility by PNs, clients and CHWs and explained the process of strategy validation.**
Chapter 7	**Conclusions, a brief summary of the study and limitations of the study done. Recommendation that the developed strategy made should be used at the clinics by PHCNs, the community, the clients, researchers and government in order to minimize the missing of appointment amongst ART clients.**

1.10 SUMMARY OF METHODOLOGY

The methodology adopted by the current study is discussed in detail in Chapter 3. The current study adopted a single research approach, namely a qualitative approach based on the nature of its objectives. The objectives of this study required the researcher to explore participants' reasons for missing ART appointments to understand better what causes adult ART clients to miss their appointments. For this reason and to understand the broader picture, the researcher involved three groups, namely adult ART clients who had been on treatment for at least 12 months and missed more than two appointments during these 12 months, PNs who are Nurse

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Initiated Management of Anti-Retroviral Therapy (NIM-ART) trained and CHWs. Non-random-probability-purposive sampling was used to sample the three groups of participants and CHCs. One-on-one interviews were conducted with PNs and adult ART clients and Focus Group Discussions (FGDs) were conducted with CHWs. Creswell's (2013) model was used to analyse data and identify the themes emerging from the study's findings.

The strategy developed in Phase 2 (the empirical phase) will be explained in Chapters 3 and 6, followed by the strategy's validation and implementation in Chapter 7.

1 .11 SUMMARY OF THE CHAPTER

This chapter dealt with the overview of the study, including the background, problem statement, purpose, research question, objectives, significance of the study and definition of terms. A brief description of the research methodology was also highlighted, including an outline of the thesis chapters. The next chapter (Chapter 2) presents a review of the literature relevant to adult ART clients' adherence/non-adherence to their appointments.

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CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The literature review entails searching, finding, reading, comprehending and reaching conclusions about the published research and related theories concerning the topic of the study. It is a critically written summary of the state of existing knowledge on a research problem (Brink, 2006; Polit & Beck, 2012). A literature search helps the researcher to understand the research strategies, the context of a study, specific procedures and instruments needed to investigate the problem and what has already been researched and learned about the subject under study.

Burns and Grove (2009) indicate that the primary purpose of reviewing literature is to gain a broader background to understand the information that is valuable and related to a problem. The literature search includes recent available literature found in the University of Venda's library, journal articles and databases such as Google Scholar, Science Direct, Ebscohost, Medline and PubMed.

This chapter focuses mainly on literature discussing the clients' behaviour: the socio-environmental determinants, socioeconomic and service-related factors affecting adherence to appointments and exploring strategies developed by other researchers concerning their effectiveness in reducing adult clients' missing of their appointments.

2.2 CLIENTS' BEHAVIOUR CONTRIBUTING TO MISSING ANTIRETROVIRAL TREATMENT APPOINTMENTS

Clients who have a better understanding and more positive attitudes towards their condition are more likely to adhere to treatment plans than those without such understanding and/or without such attitudes. Bere (2017) and Dyrehave, Rasmussen, Hønge, Jespersen, Correia, Medina, Wejse and Rodkjaer (2016) indicate that clients' knowledge and attitudes impact on their missing appointments and HIV-related knowledge also affects the understanding and utilisation of HIV-related medical information. Hence, limited health literacy is a known barrier to treatment adherence (Dyrehave et al., 2016). Strict adherence to appointments remains a

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challenge for clients and has serious implications for treatment outcomes. A client's knowledge and attitudes about a disease and its treatment also influence compliance to appointments. Poor knowledge and negative attitudes toward ART pose barriers to adherence. Kasumu and Balogun (2014) indicate that previous studies conducted in Africa reported that clients were knowledgeable about ART. This could be a result of ART counselling provided by health care providers concerning its benefits and the importance of adherence.

Although clients were exposed to counselling by health care providers, there are still challenges concerning knowledge and attitudes that impact on adherence to appointments. Kasumu and Balogun (2014) report that HIV-positive women in Ghana with inadequate knowledge were more likely to default on ART than those with sufficient knowledge.

The study by Olowookere, Fatiregun and Adewole (2012) conducted in Nigeria, revealed that the majority of clients had a positive attitude towards HIV; 84.0% believed that a person with HIV/AIDS had hope for a better future while 16% thought there was no hope for a better future for them. However, approximately 24% of the clients viewed HIV/AIDS as a punishment for immoral behaviour and 36.5% felt that it was a shameful experience to be infected with HIV. Health care providers play an essential role in supporting clients living with HIV/AIDS because those with inadequate knowledge, as indicated by Kasumu and Balogun (2014), encounter ART adherence challenges. They did not find any reason why they should continue taking ARVs, as they felt hopeless, whereas others blamed themselves and some did not accept their HIV-positive status. These factors might pose a significant barrier to adhering to ART appointments.

Olowookere et al. (2012) indicate that over 34% of ART clients believed that taking ARVs caused fatigue, as it is taken daily without a break. However, 83.6% of the clients reported that they believed that ART helps to prolong life. Olowookere et al. (2012) reported good attitudes towards HIV/AIDS among most Persons Living With HIV/AIDS (PLWHAs) with positive attitudes to their disease and 84.0% believed that a person with HIV/AIDS had hope for a better future. Also, in that study, 83.0% thought that having HIV was not the end of someone's life and another 63.5% reported that it was not shameful to have HIV/AIDS.

Similar attitudes towards HIV/AIDS were noted in Carter's (2010) study, where 56.7% (n=219) and 14.0% (n=54) strongly agreed and agreed respectively that being HIV-positive was not the end of one's life, while 38.6% (n=149) and 39.4% (n=152) disagreed and strongly disagreed respectively that it was shameful to have HIV/AIDS. It was also noted that those clients with realistic positive attitudes adhered well to ART. In contrast, 21.0% of the clients

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admitted that they would not mind passing on their infection to others. Treatment interruption leads to virological failure, and a person with a high viral load has a high probability of transmitting HIV to others (Carter, 2010).

In the study by Bauleth, Van Wyk and Ashipala (2016) conducted in Namibia, social factors such as spiritual and cultural beliefs, stigma and discrimination had adverse effects on adherence to appointments and compliance with treatment regimens. Religious and cultural beliefs, such as having faith in healing and reliance on traditional therapies, had detrimental effects on ART clients' adherence levels. Furthermore, some participants reported that when they sought advice from friends, they were advised to rely on their faith instead of the doctors or CHCs. Participants, who turned to religion (or a church) for support, were often advised by fellow church members to rely on God only (Bauleth et al., 2016). This caused some to stop their treatment in solidarity with their faith, so they did not adhere to their appointments. These ART clients ended up defaulting on their treatment and ran the risk of developing AIDS-defining illnesses and ultimately of dying from AIDS-related illnesses.

A qualitative study done in South Africa by Dehab, Charalambous, Hamilton, Fielding, Kielmann, Churchyard and Grant (2008) identified factors affecting ART adherence. These reasons included denial of the existence of HIV or one's own HIV-positive status, using traditional medicines, consuming alcohol and being away from home. Other factors added by Dehab et al. (2008) included perceived severity of ARVs' side effects, long waiting times at the clinics, unavailability of medicines at the clinic, non-disclosure of one's HIV-positive status and lack of family or social support. Psycho-social factors such as fear of stigma, anxiety and feeling better were among other factors reported as impacting on clients' ART adherence (Dehab et al., 2008).

Some clients did not attend their appointments because of the challenges related to requesting permission from the workplace or telling family members about their clinic visits. Self-disclosure of one's HIV-positive status remained a challenge for HIV-positive clients (Dehab et al., 2008). Social support, belief in the value of ART, belief in the importance of one's own life to survive and the ability to fit ART into one's daily life also enhanced clients' adherence to their appointments (Dehab et al., 2008).

Another factor that impacted on the missing of appointments was substance and alcohol abuse as these influenced clients' judgments. If a client is unwilling to receive treatment for substance abuse but is nevertheless committed to commencing HAART, there are a variety of strategies available to enhance his or her ability to adhere to treatment successfully. For

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example, one may want to consider placing the client in a Directly Observed Therapy (DOT) programme (Mayer & Stone, 2001). Using alcohol and drugs was also associated with not taking ARVs, as well as limited social or family support and loss of social security. These identified as factors associated with missing ART appointments (Nagata & Gutierrez, 2016).

2.3 SOCIO-ENVIRONMENTAL FACTORS CONTRIBUTING TO THE MISSING OF ART APPOINTMENTS

Factors such as clinical settings can affect adherence to appointments. Enumerated socio-environmental factors, such as being away from home, being too busy or distracted to comply properly, financial constraints, disruptions in accessing medications, forgetfulness, changes in the work routine, stigma and feeling sick might contribute to missed ART appointments (Dehab et al., 2008).

Dehab et al. (2008) also indicate that the main reported barriers to adherence to appointments were denial of the existence of HIV, use of traditional medicines, alcohol abuse, being away from home, feeling better on treatment, long waiting times at the clinics, inadequate knowledge about the disease and ARVs, stigma, travelling costs and side-effects of ARVs. Service-centred barriers included nurses' attitudes and knowledge, health workers' inability to conduct home visits and to contact defaulters as well as clinic hours coinciding with working hours.

Joglekar, Paranjape, Jain, Rahane, Potdar, Reddy and Sahay (2010) indicate that experiencing stigma from relatives and/or community members and the fear of being stigmatised by going to an ART centre were individual-related socio-cultural barriers among ART clients. Clients' attitudes, beliefs and behaviour towards medication/treatment also influenced their adherence levels. For example, some clients reported taking tablets only once a day, instead of twice a day, leading to sub-optimal dosages but felt that they adhered to their treatment regimens (Joglekar et al., 2010).

A study done in Malawi by Tabatabai, Namakhoma, Tweya, Phiri, Schnitzler and Neuhann (2014) found that over a third of cases had more than one reason for treatment interruptions. The most commonly stated reason was travelling for work or family issues 54.4% (n=80). Treatment fatigue/forgetfulness was also indicated by 20.4% (n= 30) of cases. Other clients cited transport costs 19.0% (n=28) as reasons for treatment interruptions. Less frequently reported reasons were weakness/sickness 14% (n=20), religious reasons 7% (n=10) and drugs' side effects 4% (n=4). Only one client stated that his/her treatment interruption was due to the use of traditional medicines (Tabatabai et al., 2014).

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2.3.1 Diseases characteristics of clients on newly initiated anti-retroviral treatment

Newly initiated clients on ART seem to have more challenges in adhering to ART appointments. Makghato (2015) indicates that most clients start missing appointments during the first three months of ART initiation. The reasons for so doing include getting worse after ARV initiation with clients experiencing Immune Reconstitution Inflammatory Syndrome (IRIS) and blaming the ARVs. Clients who commence ART during the later stages, might have low CD4 counts and find it difficult to adhere to appointments due to fatigue and illness. Carter (2010) found that missing multiple clinic appointments, soon after starting ART, is associated with poor immunological and virological responses and an increased risk of death. Clients who failed to keep clinic appointments on two or more occasions in the six months after starting treatment had poorer outcomes than those who had turned up for all their appointments (Carter, 2010).

Carter (2010) studied the association of missing appointments and ARVs and found that men with an adjusted risk ratio [ARR] = 1.16; 95% CI, 1.05 to 1.28; ARV pick up, were on nevirapine (medical visits, ARR = 1.18; 95% CI, 1.10 to 1.40). Arici, Ripamonti, Maggiolo, Rizzi, Finazzi, Pezzotti and Suter (2002) add that most clients who failed to keep appointments (78%), discontinued their follow-up visits within six months after ART enrolment. In multivariate analysis, clients in the Intravenous Drug Use (IDU) category were most likely to fail to return for scheduled appointments, as were those clients with higher CD4 counts (CD4 >500 cells/microl) or clients without AIDS diagnoses.

Arici et al. (2002) indicate that out of the 356 clients identified during their study, two-thirds had CD4 counts > 350 cells/microl (median [IQR] CD4 = 458 [394, 585]) and were scheduled to return six months later for the first medical visit. Of these clients, 74% did not return within one year for their scheduled appointments. The remaining 36% had a baseline CD4 count of 251–350 cells/microl and were scheduled to return in three months' time. Only 6% of these clients returned within four months; 41% returned within one year. Relative risks were positively associated with an employed client and negatively associated with the baseline CD4 count (Arici et al., 2002). People who had high CD4 counts were the ones most likely to miss their appointments (Larson, Brennan, McNamara, Long, Rosen, Sanne & Fox, 2011). The study by Abdissa (2013) in Addis Ababa, Ethiopia also established this where it illustrated that those asymptomatic clients tended to miss appointments compared to those who were clinically ill. Thus, clinical staging had a significant implication for ART clients' adherence to their scheduled appointments.

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The literature reviewed revealed that depression was one of the main risk factors affecting ART adherence, attributed to a passive or fatalistic-resigned coping lifestyle and feelings of hopelessness. The ART adherence levels were lower in depressed individuals compared to non-depressed individuals (Moosa & Jeenah, 2012). The study also found that the mean adherence rate at the entry to the study, among the depressed client group, was significantly lower (92.1%) than that of the non-depressed control group, confirming that depression is a risk factor for ART non-adherence (Moosa & Jeenah, 2012).

After two months' pharmacotherapy and psychotherapy, the mean adherence rate of depressed clients increased significantly to >99%, independent of the type of treatment received (Moosa & Jeenah, 2012).

2.3.2 Antiretroviral drugs' side effects soon after the initiation of antiretroviral treatment

Some clients experienced side-effects soon after ART initiation. Anti-retroviral drugs can cause side-effects, especially during the first few months. Wasti, Simkhada, Randall, Freeman and van Teijlingen (2012) mentioned that fear of the adverse side-effects of medication could affect clients' willingness to initiate or to continue with their treatment. The adverse side-effects of ARVs could negatively affect adherence because some clients might discontinue taking ARVs without consulting their health care providers. Also, some clients might selectively discontinue taking some ARVs, causing sub-optimal ART adherence associated with treatment failure, the emergence of drug resistance and disease progression.

Joglekar et al. (2010) support this by mentioning that clients' experiences of the side-effects of ARVs seemed to be a significant contributing factor to suboptimal adherence. Clients with no formal education were more likely to attribute non-adherence to poor communication and side-effects of drugs (Okoronkwo, Okeke, Chinweuba & Iheanacho, 2013). Counselling clients about treatment options and potential side-effects should be emphasised as high non-adherence rates have severe implications for the control and management of HIV (Okoronkwo et al., 2013).

2.3.3 Experiences of clients at antiretroviral treatment centres

As many as 50% (n=16) clients from three centres in Tanzania, Botswana and Uganda (16 of 32) reported experiencing problems with long waiting hours at ART centres, poor doctor-client relationships and clinic hours coinciding with the CHCs' service hours. Clients reported facing

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problems since the ART initiation stage when they made frequent visits for various tests concerning ART initiation until they stabilised on ART. Clients also faced problems regarding repeated CD4 count tests as they could not afford the cost of repeat visits and did not have the stamina to go to these centres repeatedly. Another reason for missing visits was the fear of retribution due to having missed a previously scheduled visit. Defaulting clients also shared feelings of being scared of facing the CHCs' providers after missing scheduled visits and because of this fear, they missed more appointments (Tabatabai et al., 2014).

Tabatabai et al. (2014) add that some clients (14%; n=21) reported that health care provider-related issues posed barriers to adherence. These included clients' perceptions that health care providers might refuse to give them ARV refills, loss of health passports/clinic cards, site visits without appointments, or disturbed relationships with the CHCs' providers fearing discriminatory behaviour. Perceived or experienced stigmatisation by family, friends or employers (7%; n=10) also posed obstacles to adhere to ART scheduled appointments (Tabatabai et al., 2014).

Long client waiting times are a persistent challenge facing healthcare systems across Africa and linked to a variety of undesirable outcomes. At the PHC level, where client adherence is an ongoing concern, longer waiting times are associated with lower levels of client satisfaction, reduced willingness to return, more missed appointments, poorer ratings of clinical providers and inappropriate self-referral to higher level health care facilities. In the short run, excessive waiting times increase the likelihood that clients will leave the CHC without being seen, and this could compromise clients' safety and their ART adherence (Sastry, Long, De Sa, Salie, Stephanie, Topp, Sanghvi and Van Niekerk et al., 2015).

The length of time spent standing in clinics' queues, tracking down paperwork or staff, and waiting for medication, are frequently recorded causes of clients' dropping out of ART programmes (Sastry et al., 2015). A study done in Uganda, Tanzania and Botswana reported that long clinic visits presented a major obstacle to optimal ART adherence. One study in Zimbabwe found that clients had a 'sense of fear and dread' of long queues, which often necessitated scrambling to keep their place in line and caused anxieties about not seeing the clinician before the day's end (Sastry et al., 2015). In Nigeria, a study of an out-client department showed that the majority of clients were dissatisfied with services, mostly due to long waiting times. Despite nearly 80% of clients reporting that they felt the waiting times should not exceed 30 minutes, the majority of clients waited far longer with those waiting more than 60 minutes expressing the highest levels of dissatisfaction (Sastry et al., 2015).

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Waiting times are challenging to manage in PHC facilities. However, a growing number of studies have laid the groundwork by tracking client flows and measuring waiting times. In Sub-Saharan Africa (SSA), the within-facility mean waiting times of four hours or more are not unusual (for instance, waiting times averaged 3.8–4.6 hours in three clinics in Uganda and 6.5 hours at an ART clinic in Nigeria). Excessive waiting times exacerbated the challenges at an ART clinic in Botswana, where the mean waiting times were four hours, but some clients had waited up to 12 hours (Sastry et al., 2015).

The study by Hardon, Irunde, Kglatwane, Kinsman, Nakiyemba, Akurut, Comoro, Ekezie, Kwasa, Maridadi, Moroka, Moyo, Nakiyemba, Nsimba, Ogenyi, Oyabba, Temu and Laing (2007) in Tanzania, Botswana and Uganda indicated that the problem of long waiting times was a major challenge to adherence. In Tanzania, the mean time spent at the clinic was six hours. Of the 28 interviewed health workers in Tanzania, 42.9% (n=12) cited long waiting times as a problem. In Botswana, most respondents reported that they spent around four hours at the clinic. Nearly half of the respondents spent even more than that, with the longest waiting period being 12 hours. In Uganda, the average waiting time for ARV users was five hours in the public facility and one hour in the private facility. Patients using ARV might miss one working day per month to get ARV refills. This could be a problem for some ARV users whose employers might not know about their HIV-positive status or support their need for ART (Hardon et al., 2007).

Dehab et al. (2008) indicate that in South Africa, clients wait up to four hours in clinics before receiving their medication refills and consequently, these clients became discouraged about returning to the clinics. Another South African qualitative study found that most LTFU clients reported that clinic waiting times were too long and that these delays were the reason they stopped going to the clinics for refills of their ARVs (Dehab et al., 2008).

2.4 SOCIOECONOMIC FACTORS

Few studies investigated adherence to ART appointments. This section aims to identify the socioeconomic factors that might affect ART clients' missing their scheduled appointments. Adherence to ART appointments is crucial for successful treatment outcomes.

The development and availability of ARVs proved to be turning points in the control of the HIV/AIDS epidemic. With the success of ARVs in improving the quality of life of PLWHAs and reducing morbidity and mortality rates, HIV has become a manageable chronic disease.

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Studies have shown a correlation between higher levels of adherence and improved virological and clinical outcomes. However, ensuring that PLWHAs adhere to their scheduled ART appointments poses challenges (Khalid, 2009).

Bauleth et al. (2016) indicate that the socioeconomic factors that negatively affect adherence are mainly unemployment and lack of transport. Unemployment was a critical factor that impacted on missing appointments among clients who participated in that study. It contributed to some participants being unable to afford to buy food to take with their ARVs. Factors such as the lack of transport money and work-related migration also contributed (Bauleth et al., 2016) to missing scheduled appointments. Migrants in Namibia claimed that they did not find employment in Namibia; hence, they ended up working in neighbouring countries. This contributed to their missing of scheduled ART appointments because they could not afford to return regularly to Namibia for monthly follow-up ART appointments (Bauleth et al., 2016).

Another factor indicated by Bauleth et al. (2016) was the lack of transport. Defaulters from villages far away from Oshakati (in northern Namibia) reported that it was difficult to find transport to the hospital, as there was no public transport and very few people owned cars in their villages. They had to rely on other villagers who owned vehicles to transport them to the hospital. One of the villagers reported that 'if the car breaks down and the car only comes once a week, definitely I will miss my appointment' (Bauleth et al., 2016).

Bauleth et al. (2016) indicate that a lack of support from employers affected non-adherence. Participants reported that their employers did not encourage them to take their treatment and some were discouraged if they were on ARVs. Some employers followed the clients to the clinic and forced them to leave the clinic unattended, which contributed significantly to their missing appointments (Bauleth et al., 2016). Participants claimed to be challenged by the fear of losing their jobs. Defaulters felt that disclosing their HIV-positive status to their employers and colleagues might contribute to discrimination in the workplace (Bauleth et al., 2016).

Financial difficulties were commonly cited as a reason for not returning for ART appointments or for defaulting treatment (Bauleth et al., 2016). The patterns of HIV infection vary globally, depending on the social and economic conditions of the country (Reda & Biadgilign, 2012).

In the study conducted in SSA, Reda and Biadgilign (2012) also discovered that the common reasons reported for missing appointments included financial trouble preventing clients from collecting medication on time. Distance barriers or lack of transportation to the ART clinic were also noted (Reda & Biadgilign, 2012). Furthermore, clients' beliefs that medication must be

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taken with food interfered with adherence, whenever food is unavailable. Sometimes clients were forced to choose between paying for transportation to the ART facility or using that money for food (Reda & Biadgilign, 2012).

Peltzer and Pengpid (2013) indicate that socioeconomic factors impacted on ART adherence among clients in low- and middle-income countries. The findings of the systematic review conducted on the association of Socioeconomic Status (SES) with adherence to ART appointments in low- and middle-income countries revealed that income, level of education and employment/occupational status were significantly and positively associated with the level adherence to ART appointments.

2.4.1 Financial barriers

Joglekar et al. (2010) highlight that more than 50% (n=18) of the participants in their study in India reported that financial constraints posed barriers to ART adherence, attributed to depletion of stocks due to missing visits. The reasons for missing scheduled ART visits included having no food, no money for travelling, reallocation of money for health to purchasing essential commodities or fulfilling social responsibilities and repaying loans (Joglekar et al., 2010).

According to Statistics South Africa (2016), South Africa`s unemployment rate increased from 25.6% in 2011 out of a population of 51,777,560, to 26.4% in 2015 out of a population of 53,491,333.

Unemployment has a great impact on clients with HIV because they need money to travel to health facilities as the unemployed clients cannot afford transport costs to the health facilities. This leads to interrupted visits to clinics and clients missing their appointments and eventually defaulting from their treatment.

2.5 STRATEGIES EMPLOYED BY DIFFERENT COUNTRIES FOR REDUCING THE NUMBER OF MISSED ANTIRETROVIRAL THERAPY APPOINTMENTS

From the literature reviewed, different countries use various strategies to reduce missed appointments. Kunutsor et al. (2011) indicate that the WHO, in response to the large number of clients missing appointments in health facilities, proposed the use of information and communication technology, including mobile phones. Several countries have adopted this

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strategy. Lin, Mistry, Boneh, Li and Lazebnik (2016) mention that high no-show rates can burden the clinic's productivity and affect patient care. Furthermore, they indicate that multiple studies have shown that text messages improve appointment adherence, although minimal research has focused on low-income and predominantly African American populations' settings. Tan et al. (2017) also support Lin et al. (2016) by indicating that manual text message reminders sent to clients could be an ideal strategy to reduce missed ART appointments. Lin et al. (2016) maintain that text messages are a convenient mode of communication that is widely used and can effectively reach a large population as 83% of American adults own cell phones.

Kunutsor et al. (2011) also highlighted that regular cellular phone communication, in the form of voice calls and Short Message System (SMS) showed significant improvements in clients' adherence to their scheduled clinic visits in Australia, Italy, Porto Rica and the USA. According to Bezabhe, Chalmers, Bereznicki, Peterson, Bimirew and Kassie (2014), clients used their mobile phones to activate reminders for their clinic visits. However, some clients did not have mobile phones, and some were illiterate and could not read the reminders. However, clients frequently mentioned that setting alarms and mobile phone reminders helped them to remember their clinic appointments.

Education and counselling of clients at the ART clinics are recognised as the best strategies to improve clients' engagement. Clients with adequate preparation were more likely to adhere to appointments than those with inadequate or no preparation (Bezabhe et al., 2014). During counselling, it is important to establish a client's beliefs and consider the use of a support group, peer educators, or a 'treatment buddy', especially if the client has negative perceptions about HAART or does not believe that the ARVs are effective (Stone, 2001). Education and sufficient time to address any concern are essential for minimising missed appointments as well as help clients make informed decisions concerning their treatment, care and support. Mayer and Stone (2001) emphasised 'Be mindful that there rarely is a need to begin HAART urgently. Rather, it is usually more prudent to delay the initiation of HAART until the client is ready'.

The health education strategy is mostly used in poor countries in the SSA region, where they cannot afford the network system. South Africa also uses the strategy of counselling to ensure that clients do not get lost in the health care system. Each client receives counselling before and during ART in trying to address the challenges the client might encounter (NDoH, 2016). Most clients can make decisions when assisted and gain autonomy in managing their condition (Deci and Ryan, 2015).

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Another strategy to reduce missing of ART appointments is the person-centred approach. This was observed from the clients in Tanzania, Sierra Leone and Mozambique where the rate of missing appointments declined significantly after involving the clients in the planning of their treatment and care. Clients were also given the opportunity to mention their challenges and to suggest available dates for facility visits (De Man, Mayega, Sarkar, Waweru, Leys, Van Olmen & Criel, 2016).

In guiding clients through the treatment process, the role of health professionals is critical for successfully implementing ART initiatives (Fowler Jr., Levin & Sepucha, 2011). Professionals need to work towards holding a new type of conversation (a more inclusive discussion) to identify each client's needs and goals and how these can be achieved, developed and supported (Coulter, Parsons & Askham, 2008). The client-centred approach was also supported by South Africa's NDoH (2016), indicating that clinicians should prevent missed appointments through a focus on building relationships with clients, assessing their needs, linking these needs to available resources, and addressing reasons for clients' missed appointments.

The missing of appointments has serious clinical and economic impacts because it disrupts the continuity of care. The reminder system was also effective for clients on Tuberculosis (TB) treatment, hence the WHO recommended that CHCs should appoint supporters or volunteers for all clients taking daily medications (Liu, Abba, Alejandria, Sinclair, Balanag & Lansang, 2014). Direct Observation Therapy (DOT) is used in many countries, including South Africa, as a successful strategy for ensuring adherence to TB treatment (Mayer & Stone, 2016). Given the many commonalities between HIV disease and TB and their respective multidrug therapies, there is growing interest in the use of DOT as a programmatic strategy for enhancing ART adherence (Mayer & Stone, 2001). Apart from the DOT strategy, the South African government, in trying to reduce the burden of chronic diseases in the community, also adopted the strategy of community-based care (AIDS Foundation South Africa {AFSA}, 2009). Community Health Workers visit the clients enrolled in their care, including ART clients, to monitor their progress.

The literature reviewed also shows the effectiveness of mobile phones to serve as clients' reminders about their appointments. Nhavoto, Grönlund and Klein (2017) emphasised that the mobile phone strategy works best in developed countries. South Africa uses the strategies of Mom-Connect for pregnant and breast-feeding mothers (Seebregts, Dane, Parsons, Fogwill, Rogers, Bekker, Shaw & Barron, 2018). Mom-Connect is a national initiative coordinated by

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South Africa's NDoH that sends text-based mobile phone messages free of charge to pregnant women who voluntarily register at any public healthcare facility in South Africa (Seebregts et al., 2018).

2.6 SUMMARY

Involving clients in their care and identifying their concerns to be addressed are critical factors that influence clients' adherence to follow-up ART scheduled appointments. Clients' behaviour, socio-environmental and socioeconomic factors can impact clients' missed appointments. Clients need to be given autonomy when it comes to their care, but also be guided to take the right decisions through counselling at each clinic visit. The next chapter discusses the research methodology adopted by the current study.

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CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the research design and methodology and explains the study design, settings, population, sampling design and sampling procedure, data collection and analysis. Furthermore, it describes the target population, data collection method, data analysis and trustworthiness of the study's findings.

The study was conducted in three phases. In Phase 1, a qualitative research approach was used to gather empirical evidence which addresses the main objective of the study, in order to develop a strategy for reducing missing of appointments among adults on ART in the Limpopo Province based on the reasons for missing ART appointments. Phase 2, addresses the development of the strategy. Phase 3, describes the quantitative validation of the strategy through the use of questionnaires. The objectives of the study are outlined in Chapter 1 as follows:

Phase 1: Empirical phase (qualitative research)

- Describe the behaviour of adult ART clients that contribute to missing of appointments in the Limpopo Province.
- Describe the socio-economic and environmental factors that contribute to missing of appointments by adult ART clients in the Limpopo Province.
- Explore health service-related factors that contribute to missing of appointments by adult ART clients in the Limpopo Province.
- Explore the strategies from adult ART clients, PNs and CHWs that might address the challenges of missing of appointments.

Phase 2: Strategy development

- Develop a strategy for enhancing compliance with ART appointments in the Limpopo Province.

Phase 3: Validation of the developed strategy (quantitative research)

- Validate the developed strategy for reducing missing of appointments among adult ART clients in the Limpopo Province.

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3.2 PHASE 1: QUALITATIVE RESEARCH

Phase 1 of this study adopted a qualitative approach for collecting and analysing data and identified a method as appropriate for the nature and complexity of the research problem. The method was affordable and allowed the researcher the freedom to adopt techniques and processes to achieve the study's objectives. Moreover, it was suitable for developing the proposed strategy aiming to reduce the missing of adults' ART appointments in the Limpopo Province of South Africa. A qualitative approach was used in Phase 3 of the study for the validation of the strategy.

3.2.1 Study Setting

The study was conducted in the Limpopo Province, South Africa, at selected CHCs. Limpopo Province is one of South Africa's nine provinces and the most northern province of the country. Limpopo Province is the gateway to the rest of Africa, and a unique feature of this province is that it shares international borders with three countries namely: Botswana, Zimbabwe and Mozambique, as well as with the provinces of Mpumalanga, Gauteng and North West (see Figure 3.1). The Limpopo Province has five districts, specifically Mopani, Vhembe, Capricorn, Waterberg and Sekhukhune and 24 local municipalities (see Figure 3.2). The vernacular languages dominating this province are Xitsonga, Venda and Sotho.

Figure 3.1 Location of Limpopo Province (Source: Wikipedia, 2017)

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Figure 3.2 Districts and municipalities of the Limpopo Province (Source: Wikipedia, 2017)

There are 26 CHCs in the Limpopo Province that offer ART services. The CHCs are outlined in Table 3:1.

Table 3.1 Community Health Centres in the Limpopo Province

Districts	Capricorn	Mopani	Sekhukhune	Vhembe	Waterburg
CHCs	Blouberg Dr M Machupe Mphahlele Ratshaatshaa Reithabile	Duiwelskloof Dzumeri Julesburg Giyani Grace Mugodeni Nkowankowa Phalaborwa Shiluvana	Burgersfort HC Boschoff Nchabeleng Penge	Bungeni Makhado Mphambo Mutale Thohoyandou Tiyani Tshilwavhusuku William Eadie	Mookgophong Thabaleshaba
Total	04	08	04	08	02

3.2.2 Research design

Polit and Beck (2012) state that the research design is the structural backbone of the study and described as the plan for obtaining answers to the research questions. Polit and Beck (2012) further mention that the researcher selects a specific design and identifies strategies to minimise bias. Labaree (2009) describes a research design as an overall strategy chosen by the researcher to integrate the different components of the study, thereby ensuring that the research problem is addressed. Hence, the research problem determines the type of design the researcher selects (Labaree, 2009). Polit and Beck (2012) and Labaree (2009) indicate that the research design outlines what the researcher will do, how data is collected, where the

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study will take place, and the facilities required for the smooth running of the various procedures to produce a coherent and logical study.

Creswell (2013) asserts that research designs are types of inquiry within qualitative, quantitative and mixed-methods approaches that provide specific direction for procedures to follow during the study. In this study, a qualitative research design was used to address the study's objectives. Creswell (2013) mentions that 'qualitative research is an approach that is used by the researcher to explore and understand the meaning of individuals or groups ascribed to social or human problems.

The goal of the study is to enhance the understanding of the poor adherence to appointment as phenomena. An extensive description of participants' experiences regarding missing of appointment by exploring their histories and previous behaviour patterns in detail, may shed new light on this problem. For this reason a descriptive and exploratory study design was selected to conduct the research. A descriptive approach enables the researcher to organize data in such a way that it becomes meaningful and induces insight (Burns & Grove, 2009). The exploratory approach was designed to help the researcher to detect unexpected events and to prevent failure to notice crucial patterns. After detecting possible patterns, the researcher can identify and consequently describe these patterns. The researcher's mindset should be flexible, open to the unexpected and sensitive to patterns. By using this approach a new depth of meaning can be achieved (Burns & Grove, 2009). Furthermore this approach involves developing questions and procedures, data collection in the participants' setting, data analysis to generate themes and the researcher interpreting the meaning of the collected data (Creswell, 2013).

3.2.3 Study population

Bryman (2012) defines a population as the universe of the units from which the sample is to be selected. Using the term 'unit' is does not imply the sampling of any one person, but that the researcher sampled a specific population. The accessible population of the current study includes ART clients on ART for at least 12 months at the time of data collection, PNs directly involved in ART and care and CHWs in selected CHCs in the Limpopo Province.

3.2.4. Sampling

Polit and Beck (2012) define sampling as the process of selecting cases to represent the entire population, whereas a sample refers to a subset of the population and classified as probability

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sampling or non-probability sampling (Polit and Beck, 2012). In probability sampling, the researcher can randomly select the elements and also specify the probability that the sample can include any element. However, in non-probability sampling, the researcher selects the elements deliberately, and there is no way to estimate the probability of including each element in the sample (Polit & Beck, 2012). In the current study, non-probability purposive sampling was used to select CHCs, clients, PNs and CHWs.

3.2.4.1 Sampling of community health centres

In the Limpopo province, there are 26 CHCs that offer ART services. Purposive sampling was used to select the facilities that meet the criteria for the current study. Polit and Beck (2012) mention that purposive sampling uses the researcher's knowledge to select elements judged to be typically knowledgeable about the issue under the study. Fifteen CHCs with high rates of missed ART appointments formed the sample. Despite the large numbers of clients, only CHCs with large numbers of missed ART appointments were sampled. The TIER.Net reports of the third quarter of 2017 were the source for the information concerning missed ART appointments. The top six CHCs with the highest rate of missed appointments reported missed appointments ranging from 42% to 69% per quarter. Out of 26 CHCs in the Limpopo Province, 15 were sampled to participate in the current study as illustrated in Table 3.3.

Table 3.2 Selected Health Care Centres with large numbers of missed ART appointments

District	CHC
Capricorn	Blouberg, Ratshaatsha and Reithabile
Mopani	Giyani, Dzumeri, Grace Mugodeni and Lulekani
Sekhukhune	Burgersfort and Nchabeleng
Vhembe	Bungeni, Mutale, Tiyani and Mphambo
Waterberg	Mookgophong and Thabaleshaba

3.2.4.2 Sampling of clients on anti-retroviral therapy

Non-probability purposive sampling was used in the current study to select adult ART clients who encountered challenges of adhering to ART appointments. Only two participants were selected randomly from the missing appointments report generated from the TIER.net system at each of the selected 15 facilities, giving a total of 30 clients. The researcher wrote the names of the clients on small pieces of paper that were folded, then put them in a box for the professional nurse to pick two slips of paper blindly. Arrangements were made with the selected clients. If any selected ART client was unavailable or refused to participate, the next client was selected blindly from papers in the box, ensuring that the selection of two clients per facility. As HIV is a sensitive issue, the researcher asked the operational manager or

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professional nurse to introduce each client and explain the purpose of the request. After an introduction, and obtaining consent from each client, the researcher made an appointment for the individual interview.

Inclusion criteria for clients on anti-retroviral therapy

Participants in the current study had to meet the following inclusion criteria:

- 18 years of age and older
- registered at a selected ART facility
- had missed more than two appointments within the preceding 12 months but were still active on the TIER.net system of that facility.

Makghato (2015) indicates that most clients started missing ART appointments from the first month of ART initiation and that a large number of ART clients become LTFU during the first 3–6 months after ART initiation.

3.2.4.3 Sampling of professional nurses

Regarding the selection of PNs, the researcher used non-probability purposive sampling to select participants. Only NIM-ART trained PNs were considered because they have direct involvement with the management of ART clients, including ART initiations. Two PNs per facility were sampled from the selected 15 CHCs where the study was conducted, totalling 30 PNs. However, data saturation was reached after interviews with 14 PNs, implying that only 14 PNS participated in the current study from nine different CHCs.

3.2.4.4 Sampling of community health workers

In this study, non-probability purposive sampling was used to select CHWs with more than five adult ART clients registered in their care for the past 12 months, understand ART management and are attached to one of the selected 15 CHCs that participated in the current study. Five FGDs were conducted, one in each of the selected five districts that recorded at least 30% of clients who had missed their ART appointments during one month. Each FGD included 6–8 CHWs, and a total of 36 CHWs participated.

3.2.4.5 Recruitment and training of research assistants

Recruitment for research assistance was considered due to ethnic diversity and level of education, more specifically in ART clients and CHWs. The researcher recruited two research assistants conversant in Sepedi and Venda to assist during interviews and making field notes. The researcher selected two assistants with completed master's degree in public health and

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offered them a two-days training course concerning the study objectives, their role, the instruments and dates for collecting data.

3.3 DATA COLLECTION AND RESEARCH INSTRUMENTS

In qualitative studies, researchers collect primarily qualitative data; namely descriptions (Creswell, 2013). In the current study, the researcher initiated conversations with the participants and noted how participants behaved in their natural settings (Creswell, 2013). A semi-structured interview schedule was used to collect data from all participant groups (ART clients, PNs and CHWs).

The researcher assisted by research assistants collected substantial information about the reasons why ART clients do not adhere to treatment plans and appointments. By using a semi-structured interview schedule and asking the relevant probing questions, the researcher obtained the participants' perspectives. Barbour (2008) indicates that semi-structured interviews provide room for interviewees to raise additional issues that are important to them and allow the researcher to pursue interesting issues raised during the interviews.

Polit and Beck (2012) add that the researcher sometimes uses a semi-structured interview schedule because it allows for the discussion of specific topics, the researcher knows what to ask, but cannot predict the answers. Polit and Beck (2012) further highlight that the researcher prepares the written topic guide, which is the list of areas to be discussed with the participants. The topic guide (semi-structured interview schedule in the case of the current study) should be in a logical sequence and include suggestions for probing questions designed to elicit more detailed information (Polit & Beck, 2012). A semi-structured interview schedule was an appropriate data collection method for the current study as it required the experiences of the three groups of participants' (ART clients, PNs and CHWs) about the reasons why clients do not adhere to their appointments so that a strategy could be designed to enhance clients' adherence to ART appointments.

The semi-structured interview schedule's questions were developed to guide the data collection process and derived from the following research objectives of the study:

- Describe the behaviour of adult ART clients that contribute to missing of appointments in the Limpopo Province.

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- Describe the socio-economic and environmental factors that contribute to missing of appointments by adult ART clients in the Limpopo Province.
- Explore health service-related factors that contribute to missing of appointments by adult ART clients in the Limpopo Province.
- Explore the strategies from adult ART clients, PNs and CHWs that might address the challenges of missing of appointments.

A semi-structured interview schedule was used as an instrument to collect data from all three groups of participants. The instrument consisted of two sections where Section A gathered participants' demographic information (age, gender, marital status, educational status) and Section B attempted to obtain information to achieve the objectives of the study. The semi-structured interview schedules contained different items for each of the three target groups (see Annexures I1, I2 and I3).

The following research questions guided the study:

For ART clients:

- What behavioural, socio-economic and environmental and health service-related factors contribute to missing of appointments?

For PNs and CHWs:

- Which clients' behavioural and socio-economic and environmental factors contribute to missing of appointments?
- What health service-related factors contributing to missing of appointment by ART clients?

For the ART clients, PNs and CHWs:

- What recommended strategies could reduce the missing of appointments?

3.4 DATA COLLECTION PROCESS

Appointments with the participants and data collection took place in the locations suggested by the participants, except in the case of CHWs, where data were collected at the facility to which they are attached or from their organisations' offices in the community.

The researcher together with the research assistants conducted individual interviews with the ART clients and PNs, and the FGDs with CHWs in the language comfortable for each participant to assure understanding during interviews except in case of PNs because they

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could communicate in English. The two research assistants assisted in the interviews of the Sesotho and Venda speaking participants who cannot communicate in English or Xitsonga. All semi-structured interview responses from clients were translated into English by two different experienced language translators of Sepedi and Venda. The researcher translated the Xitsonga semi-structured interview, and the supervisor confirmed it. The translators, including the researcher, first wrote each interview verbatim by hand in the original language, then translated it. The typed transcripts were submitted to the researcher who discussed the translations with the supervisor (See Annexures J1 & J2 for letters from the two translators).

Professional nurses were recruited in the morning before they started work and in the afternoon, provided there were no clients and limited routine work, to ensure no disruption to the services. The researcher engaged with individual participants at different times to make arrangements for each interview session. In the case of ART clients, individual interviews were conducted at their places of choice, provided that the researcher deemed such selected places to be safe. All participants, who voluntarily consented to participate in the study, could suggest a date and place for the interview. However, the location of the interview had to be safe, quiet, comfortable and private. Two ART clients per facility were considered for individual interviews, totalling 30 ART clients. However, 30 interviews did not take place as data saturation occurred after 17 interviews at 11 facilities. Two clients per facility were interviewed in six CHCs whereas one client per facility was available and interviewed from five CHCs.

Conducting individual interviews allowed the researcher to adapt the questions to ensure that the participants understood the questions. Repeating or rephrasing of the questions during interviews enabled both the researcher and participants to remain focused (De Vos, Strydom, Fouche and Delport, 2002). The researcher ensured that the interview process was according to the study protocol, including an introduction, explaining the purpose of the study, what it entailed to participate and obtaining written consent before each interview commenced. Multiple visits to one facility or revisiting the participants took place when the information was vague and needed follow-up confirmation.

Exploring the behavioural and socio-environmental determinants contributing to the missing of ART appointments could be sensitive and could cause embarrassment to clients. The researcher showed empathy and understanding of the clients' situations. Open-ended probing questions were used allowing the participants to express their experiences of ART services freely in their own words.

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In the case CHWs, FGDs were conducted at the CHCs or in their organisations' offices. De Vos et al. (2002) defined an FGD as a carefully planned discussion designed to obtain perceptions of a defined area of interest in a permissive, non-threatening environment. The purpose of an FGD, according to De Vos (2006), is to promote self-disclosure among participants and create a process of sharing and comparing information. De Vos (2006) highlights that when sampling for focus groups' participants, it is recommended to invite participants who have something in common.

Although CHWs could encounter similar challenges in caring for ART clients, they might differ in the manner in which they handle challenging situations. Hence, in FGDs, participants were able to share their experiences. Polit and Beck (2008) indicate that the sample for a qualitative study should be based on the information needed. Hence the guiding principle in conducting FGDs is data saturation when no new information materialises during subsequent FGDs.

In this study, the researcher sampled 40 CHWs in the participating five CHCs to be part of FGDs. However, only 31 participated, as nine did not consent to be interviewed. De Vos (2006) indicates that focus groups usually include six to ten participants, allowing everyone to participate eliciting a range of responses and asking probing questions about specific responses. All five groups were multilingual, they understood each other's language, and there was no need for translations during the FGDs, and the researcher speaks all three languages.

The researcher asked for a location for the interview to take place from each participating CHC manager and its project manager. During each FGD, the researcher made some notes and recorded the discussion using an audio-tape recorder with the participants' permission. The HCWs, who participated in the FGDs, were allowed to communicate in their languages namely, Sepedi, Venda and Xitsonga. Although the researcher could communicate in these three languages, in case of Sepedi and Venda, the researcher was assisted by the research assistance in order to collect quality information. The translations from the audiotape recordings and the field notes were done by two different translators for Sesotho and Venda (see Annexures J1 & J2). The researcher translated the Xitsonga to English.

An audio recorder was used to record all interview sessions. Permission to record each FGD was granted by the participants after requesting this during the introductory session. In addition to voice recording, the researcher made brief notes to keep abreast with what transpired during the interviews. Brief notes were preferred during interviews to avoid loss of focus and its possible effect on participants' responses (Barbie, 2012).

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3.5 DATA ANALYSIS

De Vos (2006) states that data analysis is the process of bringing order, structure and meaning to the information collected. The researcher collected data and analysed it using Creswell's (2013) model of data analysis and interpretation. The model is illustrated in Figure 3.3.

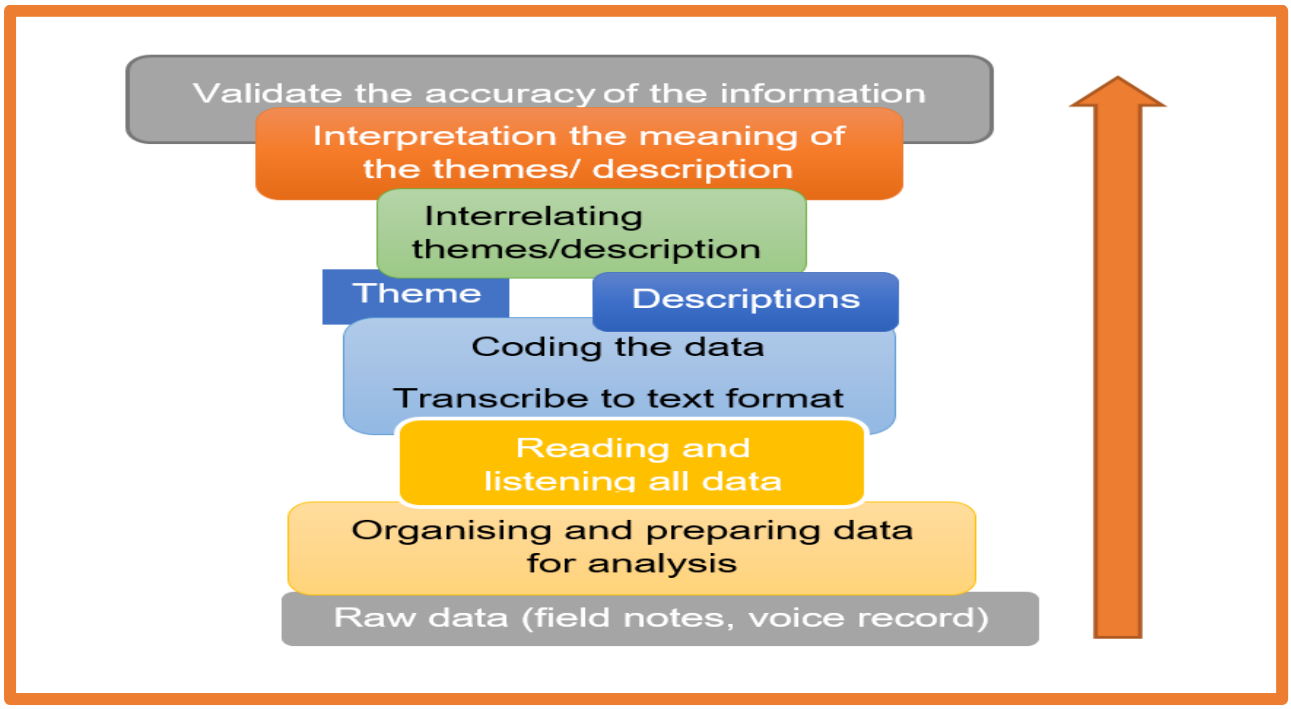

Figure 3.3 Data analysis processes (Creswell, 2013)

The recorded interviews were listened to carefully and repeatedly and transcribed verbatim. The researcher appointed three professional language translators who were conversant in Xitsonga, Sepedi and Tshivenda respectively, to translate and transcribe verbatim data in English. The researcher used content data analysis informed by the study's objectives to develop subthemes as described by Creswell (2013).

The researcher scrutinised the transcripts and carefully identified similarities and differences. Similar data were grouped to form themes and subthemes. Before concluding the data analysis, the researcher gave the independent coder (Annexure H) the transcripts for independent data analysis and to establish themes and subthemes. The researcher and the co-coder discussed their independently formulated themes and subthemes and reached consensus. After that, the final coding was done by the researcher following the data analysis process of Creswell (2013), and Chapter 4 presents the results.

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Table 3.3 summarises the whole process of the approach to the study.

Table 3.3 Summary of Study Approach: Phase 1: Empirical Phase

Objectives	• Describe the behaviour of adult ART clients that contribute to missing of appointments in the Limpopo Province. • Describe the socio-economic and environmental factors that contribute to missing of appointments by adult ART clients in the Limpopo Province. • Explore health service-related factors that contribute to missing of appointments by adult ART clients in the Limpopo Province. • Explore the strategies from adult ART clients, PNs and CHWs that might address the challenges of missing of appointments.	
Research design	Qualitative	
Setting	Selected CHCs in the Limpopo Province	
Population	Sampling Approach	Data collection
Clients on ART	Non-probability purposive	Individual interviews
PNs		Individual interviews
CHWs		Focus group discussions
Research Instrument	Interview guide with semi-structured questions	
Data Analysis	Creswell's model of data analysis.	

3.6 MEASURES TO ENSURE TRUSTWORTHINESS OF THE DATA

Trustworthiness is a method of establishing the validity and reliability of qualitative research achieved when it accurately represents the experiences of the study's participants. Researchers require findings that are accurate, unbiased and adequately represent the experiences of the target group of participants (Brink, 2006). It measures the true value of the study and encompasses four criteria: credibility, dependability, conformability and transferability.

Credibility or true value establishes how confident the researcher is about the truth of the findings, based on the research design, participants and the context of the study. The researcher critically reflected her own biases and preferences. Bracketing was achieved by identifying preconceived beliefs and opinions about the circumstances of the study and preventing these from influencing the research findings. This study achieved credibility by prolonged engagement and the time spent with the participants during appointments until reaching data saturation during interviews and FGDs. The study was conducted in a manner that the research methods engendered confidence in the truth of the data and the researcher's (and the co-coder's) analysis and interpretation of the data (Creswell, 2013; Polit & Beck, 2012).

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Dependability explained by Anney (2014) is the stability of findings over time which involves researcher evaluating the findings, interpretations and recommendations of the study to make sure that they are all supported by the data received from the participants. Anney (2014) further adds that dependability could be established by using an audit trail involving an examination of the inquiry process and product, to validate the data whereby a researcher accounts for all the research decisions and activities indicating how the data were collected, recorded and analysed. For this study, raw data from the verbatim transcribed interviews and from the observation notes and recordings will be kept for scrutiny for verification and inquiry processes. The study's supervisors examine the auditing of the raw data, findings and interpretations against the transcripts and data analysed by an independent coder and the researcher after the completion of the study to ensure internal cohesion of data, which also ensures conformability.

Conformability refers to the objectivity or neutrality of the data concerning the freedom from bias in the research procedures and results. The supervisor received the findings of this study before the development of themes and subthemes. Also, the findings, conclusions and recommendations are supported by the data, as evidenced by participants' verbatim quotations provided in the presentation of the study's findings. Voice-recorded data and word-by-word transcriptions of the interviewees' contributions during data collection could assist researchers to conduct future similar research with other participants. The researcher collected enough detailed descriptions of the data to ensure that the results are a true reflection of the relationship between behavioural and socio-environmental factors contributing to adult ART clients' missed appointments (Polit & Beck, 2012). The researcher ensured conformability by developing an audit trail; in this case, the field notes allowed an independent co-coder to come to impartially derived conclusions (themes and subthemes), which correlated with the those reached independently by the researcher.

Transferability is a criterion for evaluating the quality of qualitative data by non-involvement of the study's researcher/s. The findings of the study must be contrasted and correlated with findings of other studies, implying contextualisation of the current study's findings within the context of the relevant literature (Creswell, 2013; Polit & Beck, 2012). The current study compared these findings and those reported by other researchers concerning the studied phenomenon of adult ART clients' missed ART appointments. Triangulation involves using different sources of information, and sometimes multiple research methodologies and data analysis procedures, to interpret data about a phenomenon and create an accurate representation of reality (Polit & Beck, 2008). In this study, triangulation was used for different methods of data collection; namely, FGDs and semi-structured individual interviews, as well

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as field notes during interviews. The researcher described the research setting in detail, what transpired, as well as observations made during the interviews. Data obtained from three different groups of participants (adult ART clients, PNs working at the participating CHCs and HCWs caring for ART clients) enabled the researcher to triangulate (compare and contrast) the findings from three different sources of information.

3.7 PHASE 2: DEVELOPMENT OF A STRATEGY TO REDUCE MISSED ANTIRETROVIRAL TREATMENT APPOINTMENTS

The development of a strategy to reduce adult ART clients' number of missed ART appointments, has been guided by the IMB and influenced by recent literature and the PNs, CHWs and adult ART clients provided the information for the results of the current study.

In terms of IMB theory, ART clients who are well-informed, motivated to act and possess behavioural skills enabling them to act effectively, will adhere to ART appointments. This model implies that when adult ART clients know the facts about HIV, the correct intake of medications, possible side-effects of ARVs, advantages of adherence and consequences of non-adherence to appointments, they are more likely change their behaviour and improve their adherence to ART appointments. Furthermore, they can become more self-motivated and develop behavioural skills that will help them to adhere to their ART appointments.

Clients' engagement facilitates the transfer of ART information to them by CHC providers during medication refill appointments or general consultations. Hence, it is important to incorporate CHC providers' and clients' perspectives during the development of an intervention strategy.

Strengths, Weaknesses, Opportunities and Threats (SWOT) strategies with an emphasis on Political, Environmental, Social, Technological and Legal (PESTEL) analysis were used to develop a strategy to reduce adult ART clients' missing of appointments (Mullerbeck, 2015). The SWOT strategies were triangulated with the PESTEL analysis to ensure confirmability with the developed strategy. A SWOT analysis (alternatively SWOT matrix) is a structured planning method for the evaluation of the strengths, weaknesses, opportunities and threats influencing the reduction of adult ART clients' missing of appointments. The SWOT analysis process was used in collaboration with a variety of contributions made by adult ART clients, CHWs and PNs in the current study (Mullerbeck, 2015).

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In developing the SWOT matrix, the use of PESTEL broadened the understanding of the comprehensive picture of the political, socioeconomic, environmental and legal aspects for ART programmes to be implemented to build a vision for the future. The strategy developed according to the following steps:

- Step 1: Identified strengths applicable to enhancing the reduction of adult ART clients' missed appointments.
- Step 2: Identified weaknesses that might promote adult ART clients' missing of appointments.
- Step 3: Identified opportunities in PESTEL to exploit its advantages to assist in reducing adult ART clients' missed appointments.
- Step 4: Identified threats in PESTEL that could hinder adult ART clients from reducing the missing of appointments.
- Step 5: The researcher went through all data and listed the identified strengths, weaknesses, opportunities and threats. In the SWOT Matrix, the following four questions were posed during the strategy development:

    - How to maximise the use of strengths?
    - How to overcome the identified threats?
    - How to take advantage of opportunities?
    - What to do to overcome the identified weaknesses?

The strategy for reducing adult ART clients' missing of appointments was developed by building strengths, overcoming weaknesses, exploring opportunities and minimising threats.

3.8 PHASE 3: VALIDATION OF THE STRATEGY TO REDUCE ADULTS' NUMBER OF MISSED ANTIRETROVIRAL APPOINTMENTS

The last objective was to conduct a validation of the developed strategy to reduce adult ART clients' missing of appointments. Validation ensures that the system is free of errors introduced by developers during the implementation step (De Vos et al., 2002). Validation was undertaken to check the applicability of the strategy. Before validation of the strategy, the researcher explained how to implement the strategy at the facilities offering ART services from health care providers managing ART clients. Also, it will be utilised by the provincial and district managers of the Comprehensive Care Management Therapy (CCMT) Directorate for support, monitoring and evaluation.

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3.8.1 Research population

A quantitative design was used for the validation of the strategy. The population to participate in the validation of the strategy comprised one Director of the CCMT from the Limpopo Province, five assistant directors of the CCMT from each district and 15 operational managers from the selected CHCs of the Limpopo Province with a total of 21 respondents. As the population was invited to complete questionnaires, there was no sampling procedure during Phase 3 of the current study and all respondents (100%; n=21) completed and returned the questionnaires.

3.8.2 Research instrument

The researcher developed a questionnaire to validate the strategy based on the findings of the current study and information obtained from an in-depth literature review. The questionnaire has two sections; Section A examines the demographic data of the respondents, and Section B comprises the objectives, variables of the strategy and portion for making ticks and comments.

The validity of the questionnaire was ensured by submitting it to the principal supervisor and another lecturer who are experts on strategy development at the University of Venda. Their inputs were used to improve the developed questionnaire.

Five operational managers from five different CHCs in the Mopani District who participated in the Mopani District's data review meeting pretested the questionnaire. The meeting took place at Karibu Leisure Resort from 11–14 September 2018. Five operational managers were recruited after the first day's meeting. The researcher utilised all of them, and there was no sampling.

The researcher arranged to meet with the five operational managers to briefly explain the study's objectives and strategy. After the short presentation, they received the questionnaires to complete individually. The forms were collected on the 14 of September 2018. The researcher conducted a short discussion with these participants when collecting the questionnaires to find out if the instrument was user-friendly, easy to follow and if the strategy's activities were realistic and achievable. The researcher analysed the respondents' feedback and concluded that there was no need to retest the instrument because all five respondents agreed that it was valid.

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3.8.3 Data collection procedure

The researcher made an individual arrangement with each participant to briefly discuss the study and the developed strategy. The explanation included the fact that participation was voluntary, and there was no remuneration for the process. If the person was willing to complete a questionnaire, he/she was requested to sign an informed consent form (see Annexure I). This signed consent form was sealed in an envelope and placed in a sealed container. After this, each potential respondent received a self-administered questionnaire to complete his/her own time. The researcher made an appointment to collect the completed questionnaire, also sealed in an envelope, at a specific place, date and time. In this way, no completed questionnaire could be linked to any particular signed consent form, ensuring anonymity and confidentiality. Even after signing the informed consent form, and respondents could refuse to complete the questionnaires without any negative consequences.

3.8.4 Data analysis

Data were analysed and summarised using descriptive statistics. The findings are presented in a frequency table (see Table 6.1), enabling the researcher to conclude whether the strategy could be acceptable and applicable to reduce adult ART clients' missing of appointments in the Limpopo Province. Chapter 6 discusses the findings of Phase 3 of the current study.

3.9 ETHICAL CONSIDERATIONS

According to Polit and Beck (2012), ethics refer to a system of moral values concerned with the degree to which research procedures adhere to professional, legal and social obligations. In the current study, the following ethical considerations apply: permission was obtained to conduct the study, all participants and respondents signed the informed consent, and the researcher adhered to the principles of beneficence, confidentiality and anonymity.

The ethical considerations in Section 3.9 are in Phase 1 of the current study, and the ethical considerations for Phase 3 of the current study in Section 3.8.2 of this chapter.

3.9.1 Permission to conduct the study

The researcher ensured compliance with ethical standards to protect the rights of the participants. Approval for conducting this study was sought from and granted by the University

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of Venda Higher Degree Committee (UHDC), the University of Venda's Research and Ethics Committee and the Limpopo Department of Health Research Ethics. The ethical clearance and permission from the province were presented to each participating CHC's manager. All participants signed the informed consent and protected the right of the institutions by not naming them in any research report.

3.9.2 Informed consent

Burns and Grove (2009) state that to obtain informed consent, one needs to disclose specific information to each prospective participant. The study's purpose and its objectives were adequately explained to all potential participants, and each had the right to give voluntary written informed consent and decide whether or not to participate in the study. Participants were informed that they had the right to withdraw at any stage without incurring any penalty or prejudicial treatment. A consent form was given to each participant to be completed and signed before participating in an interview.

3.9.3 Beneficence

Polit and Beck (2012) mention that beneficence imposes a duty on the researcher to minimise harm and maximise benefits. The researcher should avoid and prevent harm and participants should not be subjected to unnecessary risks or harm or discomfort (Polit & Beck, 2012). Participants were assured that their participation and information provided would not be used against them, and the ART clients assured that they would not lose their public CHC benefits, but their participation (in individual interviews) might enhance their understanding of the benefits of adhering to their ART appointments.

3.9.4 Confidentiality

Confidentiality implies that all information collected from the participants should be treated in a strictly confidential manner (Akinsola, 2006). Confidentiality also refers to the researcher's ability to keep data sources protected (Polit & Beck 2012). Information provided by the participants was treated confidentially by ensuring that access to the field notes, audio recordings and verbatim transcriptions of the interviews were available only to the researcher, translator, supervisor and statistician.

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3.9.5 Anonymity

Participants were not required to state their names or addresses. During every interview, the term ‘mam’ or ‘sir’ was used so that there was no link between any participant and his/her information (Akinsola, 2006).

3.10 SUMMARY

This chapter discussed the research methodology, study design, study areas, study population, the data collection procedure, data analysis and ethical considerations. In the following chapter, the analysed findings will be presented and discussed.

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CHAPTER 4

PRESENTATION AND DISCUSSION OF THE FINDINGS

4.1 INTRODUCTION

Chapter 3 presented the research methodology adopted by the current study and explained the study setting, populations, samples and research instruments. In the findings from the individual interviews conducted with ART clients and PNs, as well as from the FGDs conducted with CHWs during analysis of Phase 1 of the current study, themes and subthemes emerged. During the discussion in this chapter, a literature control relevant to the current study's findings will be incorporated. Where relevant, verbatim quotations from the participants will be included to contextualise the findings. The objectives of Phase 1 aimed to:

- Describe the behaviour of adult ART clients that contribute to missing of appointments in the Limpopo Province.
- Describe the socio-economic and environmental factors that contribute to missing of appointments by adult ART clients in the Limpopo Province.
- Explore health service-related factors that contribute to missing of appointments by adult ART clients in the Limpopo Province.
- Explore the strategies from adult ART clients, PNs and CHWs that might address the challenges of missing of appointments.

The findings of the study revealed the experiences and views of adult ART clients, PNs and CHWs. All participants were attached to the participating CHCs that experienced large numbers of missed ART appointments. The tables of profiles and themes and the subthemes were developed and presented in different ways to portray the diverse issues pertaining to the three different categories of participants (ART clients, PNs and CHWs). The demographic information will be presented first for each category of participants, followed by the themes of that category.

Chapter 3 explains the data collection and analysis processes. The transcripts for each category of participants (ART patients, PNs and CHWs) were developed after completing the interviews. The language translator listened to the audio recordings repeatedly - in line with

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the field notes made during the interviews. After receiving the drafted transcripts translated in English from the three categories', the researcher listened again to the audio-tape recordings to ensure that essential elements had been captured. The development of the themes and subthemes from the transcripts was carried out both independently by the researcher and an expert co-coder of the information. During a meeting, the researcher and co-coder compared their independent analyses and reached a consensus about the themes and subthemes.

Relevant quotations from participants provided supported the findings, while literature discussions serve as a control. Alphabet letters ('PN' – professional nurses, and 'C' – clients) are used in to differentiate the comments made by the participants. In the case of the CHWs, FGD A or B or C or D or E was used, for example, FGD A is one group. The number that follows indicates the participant in that group, for example, FGD A1, referring to participant number one in group A.

The results are presented in tables portraying participants' demographic information, themes and subthemes of the findings pertaining to that category of participants, followed by the narratives and discussions of the findings. In addition, apart from factors contributing to missing appointments, the study also identified the positive findings that are not the factors related to the missing of appointments. These positive findings are regarded as the strength in this study, should it need to be strengthened. Finally, there is a summary of the findings in this chapter.

4.2 Presenting the profile, table of themes and findings with literature control of the clients on antiretroviral therapy

During the current study a total of seventeen (N=17) participants were interviewed. Both female 47% (n=8) and male 53% (n=9) ART clients participated in the study. Most participants (82%; n=14) were adults aged 18–49. There were few elderly participants aged 65 and older (18%; n=3) who participated in the current study due to the problems encountered in trying to contact elderly persons using mobile phones. More females (35%; n=6) were unemployed compared to males (41%; n=7). Of the females, 29% (n=5) had primary school education (up to grade 7), whereas 35% (n=6) of the male participants continued up to grade 12; this probably also explains why more females than males were unemployed. Most participants (82%; n=14) had partners. Of the males, 35% (n=6) did not belong to any religion, compared to females (35%; n=6). Table 4.1 illustrates the ART clients' demographic profiles.

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Table 4.1 Demographic profile of clients on Anti-retroviral therapy (N=17)

Clients Gender	Male	Female
	9	8
Age		
18–49 years	7	7
50 years of age and older	2	1
Level of education		
Never attended school	0	2
Attended primary school	3	5
Reached and never passed grade 12	2	1
Passed grade 12	3	0
Progressed after grade 12	1	0
Employment status		
Employed	7	1
Unemployed	1	6
Self employed	1	1
Relationship status		
Single	1	2
Cohabiting	2	2
Married	6	4
Religion		
Christians	**3**	**6**
No religion	**6**	**2**

The following themes for ART clients emerged: lack of social support systems and other social issues influencing adherence to appointments, socioeconomic factors affecting adherence to appointments and a lack of understanding concerning the importance of adhering to the scheduled appointments.

These challenges could contribute to clients' poor adherence to ART appointments. Furthermore, communication between the health care providers at the CHCs and ART clients, who participated in the current study was poor. It was, therefore, impossible for the ART clients to seek advice or communicate their challenges to their health care providers. Table 4.2 presents these themes.

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Table 4.2 Themes that emerged from interviews conducted with clients on antiretroviral therapy (N=17)

Themes	Subthemes
Lack of a social support system and other social issues influencing adherence to appointments	• Unstable families and their inability to provide positive support to clients on antiretroviral therapy • Termination of or failure to qualify for social/disability grants
socioeconomic factors affecting adherence to antiretroviral treatment appointments	• Financial constraints contributing to poor adherence to antiretroviral treatment appointments • Traveling long distances to clinics providing antiretroviral treatments • Difficulties encountered in disclosing one's HIV-positive status to one's employers
Lack of understanding the importance of adherence to appointments	• Poor conceptualisation of prescribed medication instructions • Poor understanding of the appointment scheduling system • Lack of clients' involvement in choosing follow-up appointment dates

4.2.1 Lack of a social support system and other social issues influencing clients' adherence to antiretroviral therapy appointments

Clients on ART have both negative and positive experiences, for example, trouble coping with their HIV-positive status, a need for someone who can understand them and dependence on other people. Hence, they need social support that could be provided by families, colleagues and treatment buddies. The subthemes include unstable families, inability to provide positive support, termination of treatment and failure to qualify for social grants.

4.2.1.1 Unstable families and their inability to provide positive support to clients on antiretroviral therapy

During the interviews, the issue of family instability emerged. The interviewed ART clients showed concern that their family members did not support them, however, their family members were not interviewed, so the only responses were from the clients. During the interviews, the researcher explored who are the family members to which the clients referred. Some participants referred to their partners, while others mentioned their siblings and relatives and only a few participants mentioned that they meant their children and grandchildren.

The participants who encountered challenges in their families reported the following:

C5: *My parents are not staying together, and my mother does not have money to give me so that I can go to the clinic every month.*

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C7: Since I got sick, my father uses that as an excuse for not regularly coming home. He always fights with my mother stating that she wastes money for a dying person.

C17: My partner left me while I was pregnant when I told him about my status. I even showed him the pills, and I have requested him to go for testing. I heard that he is staying with another person at the farm where he is working. Since today I have never heard from him.

The researcher tried to establish if there were other family members, friends or neighbours who could assist in these situations. One participant stated:

C10: Hmm…., if you are sick, people will leave you alone. I was staying with my partner, my mother and my other two siblings, at the time I was working but now they all moved out back to my grandmother's home... They didn't say much, but I can feel that I am becoming their burden.

Another participant responded:

C11: *My partner used to give me money to buy food and clothes for the children. He used to say you must save money for another thing that might be required in due course. Since I have told him about my status, I am not getting even a cent from him.*

When further asked how this affected her, she said:

C11: *I sometimes travel to the clinic, but it is far. That is why sometimes I skip a month. Sometimes I used the children's support grants.*

Participant C7 responded: *It is pointless to continue taking medication because it is affecting my mind. I really do not cope because I feel like I am rejected.* She further highlighted that she tried looking for work, but she does not have money for transport for at least the first three months. This situation posed a challenge in adhering to ART appointments.

When further asked what other options the clients had to obtain money for travelling to the clinic, some clients responded as follows:

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C5 looking sad: *I sometimes contact my brothers and my sister or sometimes my boyfriends, but it is not every month that I am successful. They sometimes switch off the phones so that I can't reach them.*

C12: *I really do not have any other options unless one asks for a lift on the road. Sometimes I arrived late at the clinic while waiting for a lift and the nurses there, they verbally attack me. So esh…. I become disappointed from all the effort I have made to reach the clinic; meanwhile, no one is appreciating.*

It is not only the issue of financial support that affects ART clients. Some participants mentioned that they only need a person to accompany them to the clinic, while others mentioned that they needed someone to show compassion. One participant responded:

C10: *I can't go to the clinic on the dates given because it is during the week and I must get somebody to remain at home with my disabled child and those who will come from school. My sister refused to watch over my disabled child mentioning that she has other commitments.*

Other participants experienced similar treatment from their families and did not receive positive support. When asked to elaborate more on this issue, some responded:

C8: *No one in my family is asking me about how I am taking the treatment and when is my appointment date. Even though I can say I must go to the clinic, they pretend as if they did not hear me.*

C3: *When I ask my family members to remind me about the date of my next visit, they just say 'Öho', come the date no one reminds me. When I enquire why they did not remind me, they indicated that they had also forgotten as they were also having many things on their minds.*

C9: *I can't read. So, when I go home, I ask my children to remind me of the dates, but mostly they tell me after the appointment dates.*

The findings of this study revealed that ART clients need their families' support. Several studies about family dynamics among HIV-affected families have taken place in various countries. The study conducted by Li et al. (2006) revealed that HIV-positive clients need help and the primary source of support was their families; this includes financial assistance, support during the disclosure process, daily routine activities, medical assistance, or psychological support. Da Silva and Tavares (2015) mention that family could members encounter

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limitations or difficulties in providing care and living with someone who is ill. It was reported during the current study's interviews with ART clients, that some family members did not offer support, and some moved out of the houses they shared with ART clients while others stopped their financial support.

Yu, Li, Qiao and Zhou (2016) conducted a study in China to assess how families reacted to an HIV-infected member. These authors identified the realities of daily domestic life and evaluated the impact of an HIV-positive status upon family relationships. Their study revealed that most family members did not inquire about the sick members' health conditions or their feelings and HIV-positive clients also had no desire to share their suffering or details regarding their infection. As a result, both parties thought that bringing up such an issue could be embarrassing (Yu et al., 2016).

Yu et al. (2016) also indicate that even though some intimate family members communicate with HIV-positive clients, the communications were limited, and emotions or thoughts rarely discussed. In the current study, one participant indicated that his family never ask about his condition. Another participant (in the current study) mentioned that sometimes her family members remind her about a clinic visit, but sometimes they do. Yu et al. (2016) further argue that attitudes and support vary in a single family, as family members' attitudes might be inconsistent.

Da Silva and Tavares (2015) highlight that a family network has a decisive influence on someone who is HIV-positive, particularly for ART adherence, which requires changes in routines and habits of all those involved. Another study conducted by Yu et al. (2016) found that most family members were not educated and not financially successful. This situation affected ART clients because they experienced physical exclusion and a lack of family support.

Not all participants in the current study indicated that they lacked family support as some missed their ART appointments because of other reasons. Yu et al. (2016) indicate that in the Yunnan province of China most families provided extensive support to the PLWHAs such as financial assistance, support with daily routines, medical assistance and psychological support. However, different families react differently to HIV situations. Other families exclude or isolate PLWHAs whereas some families choose to embrace their HIV-positive family members (Yu et al., 2016).

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Li et al. (2006) report that most families with HIV-positive members were afraid of discovery and suffering from discrimination. Consequently, family relations changed, causing family members to feel isolated and/or restricted. Yu et al. (2016) mention that to address a lack of family support, health care professionals should develop a more effective programme that does not blame HIV-positive individuals but promotes an understanding of the situation. A comprehensive intervention programme needs to include consultation with professionals to decrease fear and empower self-esteem, financial support, service policy and legal aspects (such as legal protection from abuse and discrimination). Also, Yu et al. (2016) add that the support provided by family can impact the lives of PLWHAs positively on multiple levels.

4.2.1.2 Termination of or failure to qualify for social/disability grants

Some participants in the current study identified economic factors as interfering with their ability to adhere to their ART clinic appointments included poverty, unemployment, lack of money for transport, lack of food and failure to obtain disability grants. During the current study's interviews, numerous financial factors were identified, but the issue of qualifying for disability grants was the primary complaint. Some participants report that the lack of income affects them physiologically and demotivates them from going to the ART clinic on scheduled dates. Some participants stated:

C11: I don't go for regular [ART clinic] visits because they will see that I have improved, and they will cut my grant.

C1: What is the point of going to the clinic regularly meanwhile I don't drink it [ARVs] regularly.

When asked why they did not take their treatment (ARVs) regularly and whether they were aware of the consequences of poor ART adherence, one response was:

C1: I know it, for sure that the virus will grow and grow, but I cannot die at once.

The researcher further asked how this situation affected him; he responded by saying:

C1: I sometimes adhere to treatment after the doctor's assessment, but towards the end of the year I stop treatments [ARVs] and going for clinic visits so that when I go for an assessment, they will find my CD4 counts dropped.

This practice common to other participants with the hope of maintaining or qualifying for social grants. During the interview, one participant mentioned:

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C4*: I used to stop treatment so that I keep on qualifying for social grants. I have only received the grant for two years. The following year the doctor stopped my social grant and recommended that I should be visited by social workers. I was so bored because that money helped me to buy food and pay for transport.*

Others complained that their grants were cut off and explained that this is why they did not have money to go to the clinic. However, others said they never qualified for the social grants that could assist them to buy food and pay for transport. One participant mentioned:

C15: M*y pension was cut off because they say I'm no longer sick, so now I must start borrowing money from people and paying it back. I am faced with this challenge because I don't have money at all.*

De Paoli, Mills and Grønningsaeter (2012) indicate that before the ARV roll out in 2004, People Living with Human Immunodeficiency Virus (PLHIV) in South Africa received disability grants when defined as being 'AIDS-sick'. The disability grant was the critical component of South Africa's social security system and played an important role in addressing poverty among people with HIV. Given the prevalence of unemployment and poverty, disability grants were used to ensure access to essential resources, like food (De Paoli et al., 2012). Eligibility to social grants in South Africa was affected by the ARV roll out as these grants were not paid out in cases where CD4 counts were satisfactory.

Govender et al. (2015) maintain that HIV/AIDS remains a major public health concern in South Africa and explain that 'in a context of chronic unemployment and deepening poverty SA [South Africa] has made these unpleasant situations to become better by firstly providing free primary health care to all. This included adults who received free antiretroviral treatment'. The second improvement, as indicated by Govender et al. (2015), includes the existence of grants for adults with HIV/AIDS who are unable to work because of their mental and physical disability.

Section 27 of the Bill of Rights of South Africa (1996) stipulates that: 'Everyone has the right to have access to health care services and social security, including, if they are unable to support themselves and their dependents with appropriate social assistance'. Consequently, unemployed clients living with HIV claimed that they were entitled to social grants. Naidoo, Taylor & Mabaso (2017) mention that poverty, HIV and social grants intersected causing frustrations, desperation and hopelessness that impact negatively on clients' ART adherence.

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Furthermore, Naidoo et al. (2017) claim that many impoverished and HIV-affected households could not generate incomes due to the ill health of their family member/s.

Govender et al. (2015) explain the criteria for eligibility to disability grants administered by the South African Social Security Agency's (SASSA's) guidelines. The criteria for qualification include that the applicant must be a South African citizen, permanently residing in South Africa, at least 18 years old, passing a means test and having received a medical assessment report from an appointed medical doctor (Govender et al., 2015). The status of the disability grant was either permanent (lasting longer than 12 months) or temporary (lasting 6–12 months). In that era, ART clients were eligible for temporary disability grants and re-assessments were supposed to be done every six months to confirm whether they still qualified. Hence, ART clients lost their disability grants as soon as they improved, usually as a result of increased CD4 counts.

Some practices observed in a study done in Tanzania, by Azia, Mukumbang and Van Wyk (2016) concluded that some clients deliberately discontinued taking their ARVs to decrease their CD4 counts and become very sick, to persuade the doctors that they qualified for disability grants due to the severity of their illness caused by their low CD4 count. This is similar to the ART clients' actions reported in the current study.

4.2.2 Socioeconomic factors affecting adherence to antiretroviral treatment appointments

Socioeconomic factors affected adherence to appointments by ART clients interviewed during the current study. Three subthemes emerged from this subject. These are financial constraints resulting in poor adherence to appointments, long distances travelled by ART clients for clinic visits and difficulty of disclosing their HIV-positive status to their employers.

4.2.2.1 Financial constraints contributing to poor adherence to antiretroviral treatment appointments

Financial constraints are one of the major concerns in this theme. How financial barriers affect adherence to appointments and ART is also discussed in Chapter 2 of this thesis. The current study found that some ART clients were unemployed and did not receive social grants. Some ART clients relied on their families for financial support. Other participants indicated that even though they were working, they failed to meet their families' obligations because the money they earned was insufficient. The following were some of the comments made by participants in the current study:

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C16: I have four children and two wives, and all of them rely on me. So, I need to support them and the money I am getting is too little.

C11: Like I have already told you, without a grant, my life is like a living hell. No food, no money to go to the clinic. Even though I can walk to the clinic, I still need money to buy bananas while waiting in the queue (The respondent looks very sad).

Financial barriers affected people differently. Other participants mentioned that they did not go to the ART clinic regularly because they did not have the financial means and/or time to do so:

C14: Hm!!, I mostly miss the appointment dates because I resort to working overtime in order to boost my pocket. Sometimes when I am off from my official job, I look for piece jobs. That is why I sometimes miss the dates. I only go to the clinic when I get time, mostly after a while.

C7: I use the money from 'Stokvel' (gambling) so that I can able to pay for transport to the clinic. It happens that I missed two months in succession because I wait for three months for my circle.

Participant C7 resides a few blocks from the ART clinic. The researcher asked how the issue of 'Stokvel' affected her clinic attendance because no transport was required. The response was:

C7: I must eat before going to the clinic because sometimes we stay the whole day without being attended, nurses claim that they are busy with other things.

Another participant who did not require transport to the ART clinic, added: 'if a person is financially unstable, one becomes demotivated to collect the treatment'. Others mentioned that sometimes their clinic dates coincided with dates when they had temporary jobs.

Some participants responded as follows:

C4: I don't have stable jobs. I rely on piece jobs and they are not consistent. Sometimes you find that I have been called to wash clothes and do other domestic work during the weekdays. So, mostly I compromise the clinic ART dates from the nurses to generate income to buy food.

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C12: My children and I are getting grants, but the money is too little. I supplement the social grants by selling oranges and other fruit. Hence most of the given dates I am unable to go to the clinic because I must go around to different pay points.

The current study's results indicate that financial issues impact on adherence to ART appointments. Many participants indicated that if they could be assisted somehow with food and/or money, their adherence to ART appointments might improve as well as to taking their ARVs. One participant mentioned that she did not drink the ARVs every day so they could last longer. She indicated that during the weekends she usually did not take ARVs to prolong the ART clinic return date as she worked as a financial assistant.

A study, conducted by Haberer, Sabin, Amico, Orrell, Galárraga, Tsai, Vreeman, Wilson, Sam-Agudu, Blaschke, Vrijens, Mellins, Remien, Weiser, Lowenthal, Stirratt, Sow, Thomas, Ford, Mills, Lester, Nachega, Ssewamala, Mbuagbaw, Munderi, Gengand and Bangsberg (2017) indicates that countries such as Malawi and the USA use poverty-alleviation interventions to deal with the issue of poor adherence by ART clients. These poverty-alleviation interventions include economic incentives and social protection interventions with conditional and unconditional incentives, such as cash transfers, food security and livelihood support and social protection programmes (Haberer et al., 2017). Haberer et al. (2017) further indicate that 'Social protection is generally understood as public actions to address poverty, economic shocks, and social vulnerability'. This aims to improve ART outcomes and reduce poverty (Haberer et al., 2017).

Haberer et al. (2017) further highlight that '…in the United States, five Random Controlled Trials (RCTs) of conditional economic incentives have demonstrated increased ART adherence'. Haberer et al. (2017) argue that less is known about the application of cash incentives conditional on adherence in Resource-Limited Settings (RLS). However, some small RCT result showed increased linkage to care, ART initiation and improved adherence with small prize incentives. Although in a large RCT of unconditional cash transfers, these cash transfers did not affect adherence, retention or mortality (Haberer et al., 2017).

Apart from social grants (cash transfers), various countries implement food security interventions. South Africa provides food parcels through its Department of Social Development to the most vulnerable families, including families of HIV-positive clients. However, the coverage is too limited compared to the needs, and the supply is inconsistent. In some countries, economic interventions take the form of food vouchers recommended for HIV treatment packages (Haberer et al., 2017). Unlike in South Africa, in other countries, food

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parcels were distributed to underprivileged families, irrespective of conditions. Haberer et al. (2017) indicate that studies in SSA, Haiti and Honduras reported that food supplementation delivered as part of HIV care contributed to better ART adherence and improved clinic attendance. There were similar results in Zambia where a food supplementation group achieved high ART adherence levels.

Harries et al. (2010) report that lifelong ART is demanding for patients and attempts must be made to reduce and minimise indirect patient costs such as transport costs or time spent away from their workplaces. Despite the provision of free ART in impoverished South African townships, socioeconomic status within these communities remains a powerful predictor of risk of death or LTFU (Harries et al., 2010). Many ART clients have no income and must choose between providing food for their family or transport to the ART clinic (Harries et al., 2010).

Harries et al. (2010) further highlight a similar situation in Malawi, where high transport costs were associated with lower acceptance rates of treatment among TB patients in rural communities, resulting in high rates of LTFU. Interventions to address socioeconomic barriers include reimbursement for transport costs, decentralisation of services within communities and/or providing home-based care, the latter being less expensive for patients compared to travelling to clinics (Harries et al., 2010).

Masa, Chowa and Nyirenda (2017) indicate that living in a community with few economic opportunities associated with ART non-adherence. However, Peltzer and Pengpid (2013) argue that It is not clear what effect socioeconomic factors have on ART adherence among patients in low- and middle-income countries, but the association of the two might influence the outcomes of ART.

Masa et al. (2017) suggest that a multifaceted strategy is required to improve ART adherence. Such a strategy should include programmes providing economic opportunities and life-skills training to assist ART clients to overcome economic, social and psychological barriers as well as improving households' economic security (Masa et al., 2017).

4.2.2.2 Travelling long distances to clinics providing antiretroviral treatment

Another subtheme that emerged during the current study's interviews conducted with ART clients was the issue of having to travel long distances (7–23 km) to ART clinics and the lack of transport as well as the money to pay for the transport**.** Mobile services were not available in these areas. Here are some of the comments made by participants in this regard:

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C3: I am very aware of the importance of regular check-ups, but my challenge is that the clinic is too far. I must travel inside bushes, mostly alone because other people they do not want to be identified that they are also taking the ARVs.

Participant C5 added: *Once I miss the early morning transport, it means I will go to the clinic the next day. The sisters at the clinic always shout at me even though I have missed one day, threatening to stop giving me treatment if I don't comply with the scheduled date.*

Participant C2 indicated that she was gang-raped by seven boys while she was travelling back home from the clinic, stabbed and left in the bush to die. A herd man rescued her and called other people from the village. Then they called an ambulance, and later taken to the hospital.

Another participant indicated:

C10*: The clinic is too far [added by indicating is more than 13 km] and I cannot go to the clinic and then to work on one day because I am taking the whole day for ART appointment.*

Another participant mentioned:

C13: *I do not have enough money to use for travelling every month, rather I have to save money for travels to work*.

He added that he sometimes travelled without using a transport to save money. Thus, he missed many ART appointments. He further mentioned that he sometimes complied when he got a free lift to and from the clinic from other clients, but he was afraid to ask for them every month.

The current study's findings indicate that some of the interviewed ART clients travelled from neighbouring countries to collect ARVs in South Africa. These participants made the following comments:

C9: I can't afford to come every month here for the treatment. Other people receiving grants for their children. It is difficult to come on the exact date… That is why I mostly miss the appointments.

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C6: I collect treatment from various clinics using various names and then go home to drink at least for four months because I am staying at Z....

Croome, Ahluwalia, Hughes and Abas (2017) and Munyaneza, Ntaganira and Nyirazinyoye (2018) both agree that the issue of distance is one of the barriers affecting ART compliance. Munyaneza et al. (2018) add that the distance from a client's home to the clinic could affect the accessibility of ART services and that distance has been linked to poor adherence to appointments and accounts for the failure of retaining some ART clients in care. Furthermore, Munyaneza et al. (2018) argue that clients receiving care in rural SSA encountered similar challenges such as poor transportation networks and the inability to afford transport costs. Akullian, Mukose, Levine and Babigumira (2016) also add that many people in rural Uganda had to travel for more than one hour on bare feet to reach health facilities. A similar situation was also experienced by people from four districts in Zimbabwe (Tafuma, Mahachi, Dziwa, Moga, Baloyi, Muyambo, Muchedzi, Chimbidzikai, Ncube, Murungu, Nyagura, Chimbidzikai, Ncube, Murungu, Nyagura & Lew, 2018).

Eyassu, Mothiba and Mbambo-Kekana (2016) in their study in South Africa reveal similar situations where clients had to travel more the 20 km to the ART clinic to collect their ARVs. Eyassu et al. (2016), however, conclude that there was no association observed between the distance from the facility and ART adherence in their study. Mabunda, Ngamasana, Babalola, Zunza and Nyasulu (2019) also identify similar situations to that reported by Eyassu et al. (2016). In contrast to the current study's findings, Mabunda et al. (2019) discovered that ART clients who live close to the health facility were less likely to adhere to ART appointments than those who live further away from the clinics. These authors conclude that there was no statistically significant difference in ART adherence between clients who live close to and those who live far away from clinics because adherence among ART clients living far from the health facility also varied widely.

4.2.2.3 Difficulties encountered in disclosing HIV-positive status to employers

As many as 47.1% (n=8) of the ART clients, who participated in the current study, were working. Some worked part-time, on contract appointments, as domestic workers or as full-time employees. During the interviews, the researcher identified that only one working participant had disclosed his/her HIV-positive status to his/her employer. Most participants mentioned that they realised that such non-disclosure affected their adherence to their ART appointments. Several reasons were cited such as being afraid of losing their jobs, fearing reduced wages, discriminations and stigma. Although their comments varied, the challenges were similar:

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C14: I am afraid to tell my boss about ART clinic visit because he might fire me. I am from …. and I don't have a passport so it will be difficult for me to get another job.

Participant C8 mentioned that his manager always made some nasty comments about HIV-positive people. The manager reportedly said: 'We don't want sick people in this company or sometimes he says no space for AIDS. This is not a clinic but a farm'.

Another participant said:

C2: When I asked about the time off to go to the clinic, my supervisor responded by saying 'I hope you are not collecting AIDS pills'. Sometimes he commented that 'Are you also in the sinking ship of AIDS?'.

Participants C2 added: *This make me not to ask for time off because of those painful comments.*

Some participants were afraid of losing their jobs because when a work session ended, they were always reminded not to return for the next work session if they knew that they were sick.

Participant C15 mentioned: *The manager kept on saying the company cannot afford sick leave and staff shortages because it affects productivity and profits.*

Participant C10 shared her experience after she disclosed her HIV status to her manager:

I was basically removed from my position as a shift supervisor but allowed to remain working given another duty of counting the stock in the despatch room. I wasn't allowed to do any administrative job like I previously did. I was treated in the manner that I must understand that the supervisor's job is not for sick people.

Daskalopoulou, Lampe, Sherr, Phillips, Johnson, Gilson, Perry, Wilkins, Lascar, Collins, Hart, Speakman and Rodger (2017) state that disclosure of one's HIV-positive status to family, friends and partner may link to improved health outcomes for PLWHAs. Disclosure of one's HIV-positive status is often a planned behaviour, balancing risks and benefits. Important deterrents of the disclosure include the lack of a social support network, fear of stigma and abuse, fear of conflict with one's partner, loss of social support and the breach of confidentiality (Daskalopoulou et al., 2017). Torres-Madriz et al. (2011) report similar challenges because

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60% of their participants did not disclose their HIV-positive status to their employers, and 52% had not disclosed it to any co-worker.

Similar observations were made during the current study's interviews where most participants feared losing their jobs; some were afraid of being stigmatised whereas others were emotionally abused by nasty comments, similar to the findings by Daskalopoulou et al. (2017). However, Torres-Madriz et al. (2011) found that clients who disclosed their HIV-positive status to their supervisors did not report more discrimination or more unfair treatment in the workplace than those who had not done so.

Discrimination against people living with HIV in the workplace is unlawful in almost every country. Daskalopoulou et al. (2017) comments that the high prevalence of non-disclosure to work colleagues might be due to fear of harassment and breach of privacy or reflect personal choices regarding disclosure confidants. Daskalopoulou et al. (2017) further emphasise the need for employers to enact clear policies, which demonstrates a commitment to confidentiality and non-discrimination towards HIV-positive employees.

Stutterheim, Brands, Baas, Lechner, Kok and Bos (2017) argue that the workplace is a unique setting in which disclosure of one's HIV-positive status occurs, and has unique advantages and disadvantages. Disclosure of one's HIV-positive status in the workplace can produce supportive workplace accommodations such as flexible work hours or less physical labour. Stutterheim et al. (2017) add that HIV disclosure at work can be costly and could indeed lead to workplace discrimination.

It was also found in the study done by De Groote, Vogelaers, Koeck, Borms, De Meulemeester and Vandijck (2014) in the Netherlands that almost half of the participants did not disclose their HIV-positive status in their workplaces, because of fear of discrimination and/or of losing their positions. De Groote et al. (2014) conclude that internalised stigma, and the fear and shame HIV-positive clients experience themselves remains a significant barrier to disclosure in the workplace. Also, some clients argued that disclosure would not add any value, hence, it was a personal choice and HIV-positive persons should not be victimised.

4.2.3 Lack of understanding of the importance of adhering to scheduled treatment appointments

Adherence to appointment processes implies that all steps need to be considered during ART sessions to enable the ART clients to understand the need for follow-up clinic visits. The

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current study investigated the efficacy of adherence to appointments and whether the ART clients understood these processes. Hence, the following subthemes emerged: Poor conceptualisation to prescribed medication instructions, poor understanding of the scheduling system and lack of involvement in choosing the appointment dates.

4.2.3.1 Poor conceptualisation of prescribed medication instructions

Medical instructions are the process whereby the clients get directions and advice on how to manage their conditions (Jimmy & Jose, 2011). The clients receive medical instructions, as well as the health care providers from higher authorities or policymakers. One medical instruction critical to ART is to comply with treatment. During the current study's interviews, improper adherence to medications (ARVs) occurred both among both newly initiated and long-term ART clients. Some ART clients mentioned that they missed appointments because they still had ARVs when subsequent clinic appointments were due. Some participants' comments included:

C6: I was not taking medication during the weekend. So, you find that the date I am given to return to the clinic I still have some pills hence I stay until they [ARVs] are finished.

C12: I usually don't take it with me when I go to work because I don't have proper space to hide them in the room where we are sleeping …., thus, I am not drinking the medication regularly.

C13: The container is having lots of pills and I just take it once during the night like others.

The current study's findings reveal that some participants did not comply with the instructions given to them and gave explanations. Participant C13 was supposed to take medication twice a day, morning and afternoon, but he took it once a day, violating the instructions. Some participants believed that having extra supplies implied that there was no need for follow-up scheduled ART appointments. Thus, many ART clients missed scheduled appointments even for investigations such as blood tests and TB check-ups (in case of co-infected TB clients).

One participant mentioned the following:

C1*: Eh!! What is the point of going there because I am not sick? I only go to the clinic when the treatment is finished or sometimes when I have diarrhoea.*

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Azia et al. (2016) indicate that ART adherence is a complex and dynamic process and several studies identify barriers affecting ART adherence and reveal that poor adherence to ART also affected clinic visiting schedules. Jimmy and Jose (2011) indicate that the WHO mentioned that medication adherence is the extent to which a person's behaviour is in line with the agreed-upon recommendations of the health care providers.

It was highlighted in the literature review in Chapter 2 that another barrier to proper adherence to medical instructions is the feeling of being better/healthier (Azia et al., 2016). These authors reported that a 33-year-old male respondent in their study discontinued taking his pills when he experienced improvements in his health and carried on with socialising with his friends. This patient only went to the clinic for medication refills when he had pain.

4.2.3.2. Poor understanding of the appointment scheduling system

During the current study's interviews, the participants were asked if appointment scheduling was discussed during adherence counselling sessions. Most indicated that there were no such discussions conducted with them. The following were some of the participants' responses:

C1: I was not told about the appointment system. After the session, I was just told to come back on the specific date written in my appointment card.

C13: I was told that people of my condition must come on Thursday of the date given. I only thought that it meant that all HIV-positive clients were only seen on Thursday at the clinic.

Another participant indicated that she was surprised when she was told to come at eleven o'clock while her partner, who went to the clinic on another day, was told to come at eight o'clock. She responded as follows:

C5*: The clinic nurses are not fair; they are not treating us equally because I am a woman. I was told to come late whereas others were told to come in the morning. So, that I will find the clinic already full.*

Another participant said the following:

C15: They have changed my days. I normally used to go to the clinic on Mondays, but now I go there sometimes on Fridays, sometimes Tuesdays or Thursdays. It is confusing me because I am unable to tell my boss exactly which day I should go to the clinic.

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Another participant said:

C*: I was surprised when I was told to come at ten o'clock, and I was [only] attended to at three in the afternoon. They should have told me to come in the morning once so that I could finish earlier.*

For the clients to understand all the logistics of appointment scheduling, health care providers need to explain this in detail during ART initiation sessions. Most participants, interviewed during the current study, did not understand the allocation of follow-up visits. Gupta and Denton (2008) explain that appointment scheduling is mostly used in PHC settings and in hospitals for planning surgical procedures. Gupta and Denton (2008) indicate that appointment scheduling systems are essential for efficient and timely access to health services, which is important for realising good medical outcomes. It is also a significant determinant of client satisfaction. The ability to provide timely access is determined by many factors such as how many clients have bookings on one day, the type of service needed (for instance, how many patients need to have blood samples collected and how many need only prescription refills and how many staff members there are at that specific site). Clients' needs vary; consequently, their allocation days might also vary. Some clients might need to see the doctor who is only available once or twice per week at a facility, so prioritisation of these clients is considered when scheduling appointment dates and times.

Ahmadi-Javid, JalalI, Kenneth and Klassen (2017) indicate that outpatient appointment scheduling problems have gained increased attention. Clients need to understand the scheduling of appointments at their very first ART session. If they are changes in the Outclient Appointment System (OAS), known as the booking system in South Africa, the client needs to be updated (Ahmadi-Javid et al., 2017).

Ahmadi-Javid et al. (2017) maintain that health care providers could minimise clients' confusion about scheduled appointments by considering the best tactical decisions, as presented in Table 4.3.

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Table 4.3 Tactical decisions to consider during appointment scheduling

Tactical decisions	Definitions
Allocation of capacity to different client groups	Capacity allocation deals with the problem of how the available capacity divides among different client groups (such as first-time or returning clients, and pre-scheduled or same day clients)
Appointment scheduling window	The appointment scheduling window of an OAS determines how far into the future an appointment can be scheduled. This affects the no-show rate, and thus the efficiency of the OAS. When the scheduling window reduces, indirect waiting time decreases, and consequently the no-show rate decreases
Block size	In general, a block is a set of clients scheduled at the same time or the number of clients scheduled at the beginning of a slot (which is common practice in the health care facilities in the Limpopo Province)
Number of appointments per consultation session	Studies that consider the decision about the number of appointments per consultation session seek to determine the optimal number of clients that can be scheduled for each consultation session, usually with the goal to minimise the client waiting time. Clinics may accept more clients than their available capacities to reduce the negative impacts of no-shows and to improve client access. This policy is called 'overbooking' in the literature. If the level of overbooking is determined inefficiently, it leads to longer client waiting times.

Although the same policies guide health care facilities, they vary in practice and implementation of those policies. Clients need to understand the system used by the facility to avoid confusion and misunderstanding that can contribute to the number of missed ART appointments.

4.2.3.3 Lack of clients' involvement in choosing follow-up appointment dates

The current study identified that provider-client involvement contributed to the missing of appointments by ART clients. This subtheme emanated from the situation where most participants indicated that they did not understand the appointment scheduling process. Although there were probing questions, participants merely reiterated that health care providers did not involve ART clients in selecting follow-up appointment dates.

All most all the participants mentioned that during the ART initiation session, they were not given much opportunity to participate. Participant C3 said the following:

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I was tested for HIV because I was complaining of sores in my private parts. The lay counsellor told me that I am HIV-positive. She then told me to go back to the sisters where I will be given treatment. I went back to the sister. The sister asked me about my HIV result. I replied that they said I am positive.

She then looked at me and she said that UTT [Universal Test and Treat] said I must start you on treatment. I was confused by that time and I had asked who UTT is. She replied by saying that it was a new policy. She then took a while staring at the file and writing silently. At the later stage, she asked me if I was coughing. I replied no. She continued writing. At the end, she pulled out one bottle of treatment and said to me 'these are ARVs, and you are going to take it for as long as you live.' She further asked me 'did you discuss the time of taking medication with the lay counsellor?' I replied eight o'clock in the evening. She gave the appointment card and she told me to come back in two weeks' time, and she wrote a date on that appointment card. Then I left without asking any questions.

Most participants at their ART initiations experienced similar situations. Some participants responded as follows:

C8: The sister wrote in the white file and she asked if I had signs of TB, who I was going to tell that I was I HIV-positive, did I have children, did I have a partner. After that, she then told me that 'I am starting you with ARVs treatment' and explained that I was going to 'see' nightmares during the night, and I had to tolerate that and never stop. The she gave me the return date.

C10: I was just told that I was going to come on the date written in my card. When I explained that that day, I would be not available as would be working, I was told to choose between life or death.

He added by saying that the sister told him that it was compulsory to come on the given date written in the appointment card.

Intense probing about the issue of engagement during the ART initiation sessions took place. From the participants' responses, the researcher noted that the treatment care plan had not been addressed. When further asked about their feelings concerning this matter, some participants responded as follows:

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C7: I was afraid to tell the sister that I would have challenges with the day she was giving me because on that day I am getting the money because I am getting the children's grants at the month's end.

C4: I have noticed that the date given I would be working far at……, but when I tried to ask for extra medications so that I could come back after two months, I was told that the policy did not allow giving extra medications.

C11*: I tried to tell the sister that there was no one at home to assist me to come to the clinic on the day given, but I did not pursue it further because I could see that the sister was not interested. She continued giving me that date after all.*

C12*: I only come home once a month during month end. I have explained that to the nurse and, requested for additional treatment. She replied by indicating that the container had 28 tablets only.*

Most of the participants in the current study encounter financial challenges, some lack family support, others work, and many were affected by having to travel long distances to ART clinics. The issue of choosing the appointment date should have been shifted from provider to client during ART initiation. Clients' concerns and challenges should be one of the top priorities because it affects clients' adherence to appointments.

Dang, Westbrook, Njue and Giordano (2017) highlight that clients were the most vulnerable population when they enrolled in a new health care programme. They are at risk of missing subsequent visits, dropping out of care entirely (termed 'lost-to-follow-up') in the context of ART. Dang et al. (2017) emphasise that the clients' first visits are crucial because they direct the clients' attitudes and behaviours in the future.

Agostino, Atkinson, Letella, Rogers, Morrissey, DeRosa and Parker (2017) and Deveugele (2015) also emphasise that effective communication in health care interactions cannot be overstated and is significant. Client communication is crucially important because clients encounter specific challenges in interacting with health care providers. To ensure an accurate understanding of clients' perspectives, clients must be able to effectively communicate their needs, concerns and preferences (Agostino et al., 2017). Therefore, to achieve the best possible outcomes, both health care providers and clients must interact and be engaged throughout the session, including the scheduling of subsequent visits.

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During the current study's interviews with the participating ART clients, it became apparent that limited communication between health care workers and clients caused communication gaps. Agostino et al. (2017) explain that 'communication gaps occur when providers focus on major diseases and fail to respond empathically to clients' expressions of emotion'. This correlates with the researcher's realisation during the interviews that health care providers concentrated on initiating treatment rather than on involving ART clients in decision-making about the management of their condition. Some participants expressed fear of health care providers' responses to their concerns, so they refrained from participating during discussions.

Dang et al. (2017) support the fact that judgments made during the very first few minutes of interaction could significantly impact behavioural outcomes. During the first contact with an ART client, a health care provider should identify any challenges that might affect treatment adherence and outcomes. Factors like anxiety, fear and distress should be addressed in the establishment of rapport. By so doing, the health care provider would enhance clients' involvement in decision-making about their care, including follow-up ART appointment dates.

In summary, ART clients need prioritisation in the health care system. They face many challenges that impact negatively on their treatment adherence and outcomes. There is a need for their engagement throughout the process of identifying a treatment plan with follow-up appointment dates to suit them. In doing this, the challenges of defaulters, LTFU, poor adherence to treatment and missing scheduled appointments dates might reduce. The best way is to do it correctly the first time, involving the clients in their treatment plans and follow-up dates in the initial phase of enrolling them in the ART programme.

4.3 FINDINGS AND LITERATURE CONTROL: PROFESSIONAL NURSES

The profile of the professional nurse will be presented first, followed by the table of themes, the results, discussions and the literature control.

A total of 14 PNs participated in this study. Most were females (64.3%; n=9) and only 35.7% (n-5) were males. This was supported by the SANC's (2017) statistics indicating that the Limpopo Province had 1,549 male-registered nurses compared to 10,564 female registered nurses. Most of the participating PNs were 20–49 years old (92.9% n=13) and 28.6% (n=4) had at least 11 years' experience in their current posts. As many as 85.7% (n=12) had post-graduate diplomas and/or degrees, and 71.4% (n=10) had comprehensive care management and treatment support training of HIV-positive clients (CCMT), whereas fewer 35.7% (n=5)

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had trained in adherence counselling, but only 14.3% (n=2) had undergone training in advanced clinical care of HIV-positive clients. These programmes are crucial for the management of ART clients, especially the I-ACT course because it addresses many HAART related issues, including the importance of adherence to ART appointments. The study showed that no participant had completed the I-ACT programme. The demographic profile of the participating PNs is in Table 4.4.

Table 4.4 Demographic profile of participating professional nurses (N=14)

Items	Professional Nurses			
Gender	Male		5	
	Female		9	
Total			14	
Age	20–25yrs	26–35yrs	36–49yrs	Above 50 years
	2	5	6	1
Years of employment in the current post	0-5yrs	6–10yrs	11–19yrs	20+yrs
Total	2	8	3	1
Level of education	Only a nursing diploma			1
	Postgraduates nursing diplomas			7
	Nursing degrees			5
	Master's degree in health sciences			1
HIV management training/programmes	Comprehensive care management and treatment support of HIV-positive clients (CCMT)			10
	Advanced clinical care of HIV-positive clients			2
	Adherence counselling			5
	Integrated access to care and treatment (I-ACT)			0

Interviews with PNs were done concurrently with the interviews of the ART clients. Where possible, after interviewing an ART client, if the relevant professional nurse was available at the facility for an interview, then the researcher conducted that interview as well.

The themes that emerged during data analysis included: clients' inadequate engagement in choosing appointment dates, a dysfunctional health care system and factors observed by PNs concerning contributing factors to poor adherence to scheduled ART appointments. Table 4.5 outlines themes that emerged from the PNs' interviews.

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Table 4.5 Themes that emerge from interviews conducted with professional nurses (N=14)

Themes	Subthemes
Clients' inadequate engagement in choosing appointment dates	• Lack of clients' involvement during adherence sessions • Challenges encountered in selecting appointment dates
A dysfunctional health care system	• Poor working conditions • Lack of control of migrants • Dysfunctional appointment booking system
Factors observed by professional nurses that contribute to poor adherence to scheduled appointments	• Clients' non-disclosure of their HIV-positive status • Poor client-provider relationships • Clients' long waiting hours to health care facilities

4.3.1 Clients' inadequate engagement in choosing appointment dates

During the data analysis, the inadequate engagement of clients in choosing appointment dates emerged as a theme, as well as the following subtheme, namely the lack of clients' involvement during adherence counselling sessions and challenges in selecting appointment dates experienced.

4.3.1.1 Lack of clients' involvement during adherence sessions

Clients' experiences of their inadequate involvement in selecting ART appointment dates was addressed in Section 4.2 of this chapter. Professional nurses, during the current study's interviews, admitted that they involved ART clients to a limited extent only during discussions because they believe that clients received adequate counselling from lay counsellors. Participants were asked to briefly explain to what extent they involved ART clients during initiation, and some of the comments made were as follows:

PN 7: I normally do most of the talking, teaching the client about the side effects, dangers of missing a dose and practising safer sex and condom use and including family planning, while busy completing the clinical stationery.

PN3: We discuss the treatment, how to take it, not to gain weight and many more [aspects].

PN4: I sometimes assess the distance, family support, cell numbers of the next of kin because this [knowledge] assists us in identifying that this person is going to have problems.

However, one participant indicated that he sometimes engaged clients by asking questions to assess their readiness to take treatment. He responded as follows:

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PN6*: In most cases I find out from the client the information received during adherence counselling, checking their understanding of their illness and assessing whether the client is ready to be initiated.*

Another response indicated:

PN1: *I dwell much on the treatment and side effects and assisting the client to choose the time for drinking the ARVs.*

A follow-up question was whether PNs knew about the role of the client during ART initiation sessions and/or during clinic visits, but most participants were not clear about their role. Some of the comments were as follows:

PN9: Her role is to guide the clients on how to take treatment.

PN5: Äh!!, I have never thought about that, I think is because, she was the one who is sick, and it is her responsibility to be there in the session to receive medication.

PN14 hesitated: Eh! Does she have a role? Yha! I think her role is to ask questions and to seek clarity where she does not understand.

The participants' responses indicated that clients' involvement in their treatment was not effective. It also identified that the participants mostly talked while the clients listened as confirmed by the ART clients' responses indicating that the nurses did the talking as the latter do not understand that clients' engagement is the backbone of accomplishing positive outcomes. Mgbere, Khuwaja, Bell, Rodriguez, Arafat, Blair and Essien (2017) indicate that client-provider engagement is complex and that health care providers need skills for this purpose. Dang et al. (2017) maintain that even stable ART clients need intermittent reassurance to control their condition because of all their challenges. Although clients value health care providers' knowledge and recommendations, they still want to be asked what they think about their treatment plans (Dang et al., 2017).

4.3.1.2 Challenges encountered in selecting appointment dates

The main aim of the current study was to produce a strategy to improve the missing of ART appointments. Although the ART clients had concerns about the appointment dates given to them, the nurses appeared less interested, as evidenced by the following responses when asked to highlight how return dates were allocated to ART clients:

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PN1*: Depending on which day the client came. If the client come on Thursday, we count 28 days and give the next appointment date.*

PN4*: If the clients are initiated during the weekend, we change the next visit to be during the week as we don't offer ARVs during weekends.*

PN14*: We are guided by the booking forms; we book only 40 per day. If the number has been reached, then the client is given the next day.*

When further asked how they choose the appointment date, most PNs mentioned that they were guided by the number of pills in the client's container. Only a few PNs stated that they followed the guidelines. When further explored, some clients' factors that could affect appointment date allocations mentioned by the PNs, included the following responses:

PN12: If we ask clients when they think they might come back; it might cause confusion, you will find that one day is full of clients as compared to other day. Hence, we group them to balance the workload. If the client is not there on that date, she will come on another day by herself.

When asking a follow-up question about allocating an alternative day when the initial date might not suit a client. The response was:

PN12. *No. Client just come any day that she will be available*.

A different response provided by participant PN11 was:

I sometimes ask the clients if the day given is OK, but most clients said the date is fine. Others will say, it will depend on whether they will get time off from work. Most clients don't dispute the given date.

Other participants' responses were:

PN8: *Honestly!!, I have never involved the clients in choosing the return date. I only count 28 days on the calendar and inform the client. …I am also guided by the number of tablets the client still has [in his/her container].*

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PN13*: No ways, the clients are not allowed to choose the return dates. That is the role of the nurse to give return dates. The client must adhere to that day so that the visit will be captured in TIER.Net system. The system will be affected if clients choose their own appointment dates.*

PN2: *I have never given a client the platform of choosing the return dates. I already know that the client is given 28 days. The determinant of that is the number of tablets in the container. I only tell the client to return anytime when experiencing side effects.*

Assessing the responses from the participants, the scheduling of ART follow-up appointments appears to be a significant problem that may contribute to the missing of ART appointments. For as long as clients do not participate in their care plan, missing of ART appointments might remain a challenge. Minvielle (2018) indicates that clients wanted their personal needs to be considered and suggested that health care delivery systems should customise services for each client, instead of using the 'one size fits all' approach. Efforts to develop customised care must be designed around an understanding of what happens around the clients and must incorporate individual clients' preferences by focusing on shared decision-making concerning appointments and self-management (Minvielle, 2018). In conclusion, Minvielle (2018) states that there is a need to think about designing health delivery systems to fit the needs and expectations of individual clients because the clients' decisions about their health care could result in more favourable treatment outcomes.

4.3.2 A dysfunctional health care system

In the current study, the term 'health care system' applies to all the activities with the primary function being to promote and restore the health of an individual. The theme of a dysfunctional health care system emerges from the data gathered during interviews conducted with PNs. Participants complained about several issues within the system that inhibited them from providing quality services. Issues such a heavy workload, shortage of staff and large amounts of clerical work were mentioned. Subthemes included poor working conditions, lack of control over migrants and a dysfunctional appointment booking system.

4.3.2.1 Poor working conditions

Participants highlighted that the working environment prevented them from providing good quality services. Most participants indicated that there were no specific rooms for counselling clients. Counselling usually took place in a general consulting room. As a result, nurses ended up fast-tracking the queue to avoid other clients' complaints. Shortages of staff contributed to the inadequate provision of quality care, and one nurse was expected to perform many different duties at the same time. One participant made the following comment:

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PN7*: We are short staffed. I must initiate clients, give medication, collect blood, do Pap smears while others are waiting for other reasons outside.*

Some participants complained that they had to do much clerical work such as writing and recording, duplicating information in different registers and clients' files.

PN13*: The writing is too much. Sometimes I even forgot to write the return date on the client's … card.*

PN3*: Due to lot of writing and talking, I sometimes write a wrong return date in the file which does not match with the client's return card. At the end, it appears as if the clients have missed the appointment meanwhile is a clerical error.*

During the interviews, most participants complained about insufficient guidelines and policies. They also mentioned that not only the guidelines are needed, but also checklists or algorithms to improve their service. Some of these responses included the following:

PN9*: We don't have guiding tools that will assist us during the ART sessions. That is why we omit most of the important aspects. We should be having things like checklists in each and every client's file so that one can make a tick to confirm that all the areas have been covered.*

PN13 *we sometimes run short of clinical stationary such as patients' summary visits and patients retained card. That is why we sometimes forget to write the dates for clients. as a results most clients miss appointment indicating they were not told when to come back.*

Mburu and George (2017) reflect that inadequate human health resources pose a global challenge affecting the quality of health services. Inadequate human resources raise some significant concerns, especially in South Africa which has the largest HIV epidemic in the world, causing all health facilities to work under pressure (Mburu & George, 2017). Health personnel have to attend to large numbers of clients daily to avoid backlogs, leading to emotional burnout, stress and frustration (Mburu & George, 2017). Runciman, Merry and Walton (2007) indicate that there is a need to recognise and acknowledge that healthcare professionals are fallible and make errors when caring for clients in poor working conditions with limited resources. Runciman et al. (2007) conclude that the human condition cannot be changed, but the conditions under which human beings work can be changed/improved.

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4.3.2.2 Lack of control of migrants

In the current study, the term 'migrants' refers to people who are coming from South Africa's neighbouring countries. During the interviews, the participating PNs maintained that most clients who miss ART appointments are migrants. As these migrants usually have no passports and supply the wrong addresses and personal details, tracing them is almost impossible, as indicated by the following statements:

PN12: Those people (implying the migrants) are all over South Africa, and they are here to collect medications. That is why they collect (medicines) at different clinics.

PN1*: The challenge of missing appointments is mostly with the migrants because they move from one place to another looking for jobs and it is difficult to trace them.*

Participating PNs reported that they observed people coming from other countries just to collect medications and it was difficult for them to come on the specific dates. When they reported the matter to their managers, they were told that there was nothing one could do as it was beyond their control. Some participants responded in this manner:

PN4: *It is very difficult to refuse giving them [migrants] treatment, because even though they do not have passports, our law does not restrict them to receive services.*

PN7: *Refugee camps should be considered for migrants so that treatment could be delivered for control to be effective.*

Idemudia, Williams and Wyatt (2013) indicate that individual economic challenges such as poverty, unemployment and homelessness might not be the only factors contributing to international relocations. Institutional and structural factors such as civil unrest, wars and political instability can also serve as motivators for emigration to other countries.

The researcher was informed by the participants in one area of the study that the number of migrants had increased drastically. Pavil and Maltezou (2017) and Castelli and Sulis (2017) also concur with the observation made by the researcher noting that in European countries the number of migrants has drastically increased due to war, violence, prosecutions in their home country and many other reasons.

Pavil and Maltezou (2017) indicate that migration itself is not a risk factor for health, but specific health needs of migrants should be clearly understood and communicated to health

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care practitioners. Pavil and Maltezou (2017) state that migrant people are typically poor, and many affected by transmittable conditions, explaining why they might exploit the health system. Arrey et al. (2017) report that one reason for migration is to get medical help.

Pavil and Maltezou (2017) assert that the inadequate responses of health care systems could be due to poor preparedness, aggravated by the legal issues that migrants face in relation to health and other essential services. Approaches to managing migrants' health problems did not keep pace with increasing challenges associated with the size, speed, diversity and disparity of migration patterns and factors such as the barriers to accessing health services (Pavil & Maltezou, 2017).

Although the current study found no evidence that migrants experienced discrimination, the participating PNs disapproved of migrants' access to health care services. Arrey at al. (2017) indicate that migrants were prone to discrimination. However, without clear-cut policies and guidelines at national, provincial and health facility levels, healthcare providers might not know how to manage migrant ART clients.

4.3.2.3 Dysfunctional appointment booking system

A booking system has been introduced to public health care facilities to alleviate the burden of large numbers of clients congregating at a facility on any one day. The booking system was strengthened during the implementation of the ideal clinic realisation management strategy with the potential benefit of decongesting the clients in facilities (Egbujie, Grimwood, Mothibi-Wabafor, Fatti, Tshabalala, Allie, Vilakazi & Oyebanji, 2018). The booking system also enables facilities to plan the allocation of resources. The current study's findings indicated that the booking system is poorly practised. The participants agree that they knew that the booking system should be implemented, but they encounter challenges implementing it. Some of the comments were as follows:

P 8*: We just use the booking register to get the monthly statistics for chronic clients. Normally, we just enter those clients as they come following one another. The time slot is completely ignored because we just tell them when to come back.*

PN14: *'Ah!! I sometimes forget to write in that form, I only concentrate on clinical stationery, tick register and client-retained card.*

PN3: Yes, I do write in the on the booking form, but not always because we sometimes run short of the copies.

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Some participating PNs did not report challenges with the booking system and indicated that they used it effectively and told the clients when to come back and at what time. One challenge they reported was that some clients came in the morning even though they were scheduled for the afternoon sessions.

Participants who had challenges with the booking system cited the following reasons:

PN5: We can't see the clients the whole day, 40 [clients] per day are too many for one person. Rather they should come in the morning all of them so that we deal with them at once.

PN12*: We have too many chronic clients, so it will not be possible to book them because in a day we see more than 160. The form accommodates only 40 [clients] per day per nurse. This will simply means that clients will go home unattended.*

A follow-up question was asked by the researcher to check whether the participants understood the booking system. The responses included the following:

PN11: To tell you the honest fact, no one has been in-serviced about this system. We were just told from the meeting that we must start using the form as from the beginning of the month.

PN1: Yes, we were briefly in-service, and I remember we were so excited about that, but we have overlooked the issue of the large number of clients in our care. Even though we divide them by 40 the number still requires us to exceed 40 per ideal clinic stream. One nurse is allocated per stream, so!!!! It is really challenging on how to implement it.

PN14: I just write the clients without them [ART clients] knowing what is it that I am recording.

Not only ART clients are seen in the chronic stream as it includes other chronic clients. Osadchiy and Diwas (2017) state that it is vital to consider clients' selected appointment schedules because if a client cannot attend, capacity will be wasted due to missed appointments. Osadchiy and Diwas (2017) maintain that it is important to understand the booking system to avoid selection bias because it could affect waiting times and increase the likelihood of non-attendance. So, when clients book, the types of conditions to take into account are, for example, an ART client, who needs initiation on ARVs requires more time than the one who is coming for follow-up appointments.

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The booking system is not only a challenge in the facilities of the Limpopo Province only but also in other countries and provinces. The East London study by Tan et al. (2017) reveal that one health unit received many complaints from clients regarding the booking system's implementation. Tan et al. (2017) conclude that a good booking system should be flexible allowing the clients to make their bookings or change appointments if they could not attend on the given date.

4.3.3 Factors observed by professional nurses that contribute to poor adherence to scheduled appointments

Missing of appointments is a daily challenge in health facilities nationwide. Tan et al. (2017) indicate that not only ART clients missed appointments, but also other clients booked for different reasons. Tan et al. (2017) state that there are various reasons why clients might not attend their appointments. These include practical reasons, such as transport limitations or difficulty organising childcare, illness, lack of motivation or forgetfulness, the appointment time, prior engagements or work schedules. Participating PNs reported their observations for clients missing of their ART appointments, giving rise to the following subthemes: non-disclosure of HIV-positive status by ART clients, poor client-provider relationships and long waiting times experienced by ART clients.

4.3.3.1 Clients' non-disclosure of their HIV-positive status

During the current study's interviews, participating PNs reported that most of their clients did not disclose their HIV-positive status to their families, colleagues or friends. One participant reported:

PN5: The client indicated that she was afraid to tell the husband about the status. If her husband is at home, she does not come to the clinic because her husband always wants to see the medications upon on her arrival.

Another participant indicated that one client said:

PN14: Where she is working, the boss does not know about her status and she is told that she will go to the clinic during weekend only during her off time.

Another participant also mentioned:

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PN10: One client mentioned that her mother only knows that she was coming for family planning and it becomes a challenge because family planning is after three months.

Another behaviour noted by one participant was as follows:

PN3: I have noticed that … was around, but he never entered the consulting room until I have finished all the clients. Fortunately, I managed to retrieve his file and called him. He responded by indicating that, he should leave because he saw one of his relatives in the queue, he never wanted it to be known that he is also sick.

Other participants reported similar experiences in the current study where one indicated that a client ran out of the facility claiming that she received an emergency call from home. When the participant tried to find the client because she was due for blood collection, the client's mother replied that she had left because she was there for a contraceptive injection.

There were several studies about the issue of disclosure of one's HIV-positive status. Evangeli and Wroe (2017) mention that although HIV disclosure has several benefits such as social support and enhanced ART adherence, people still encounter challenges disclosing their HIV-positive status to others due to anxiety, fear and worries. Professional nurses, who participated in the current study, mentioned that many ART clients who missed their appointments did not disclose their HIV-positive status to their families, partners, friends and employers.

As the issue of disclosure is not treated as an emergency, ART clients can disclose their status whenever they are ready to do so. Brittain, Mellins, Remien, Phillips, Zerbe, Abrams and Myer (2018) indicate that disclosure is a process where one reveals one's HIV-positive status and can occur over time. Hence, during ART follow-up sessions, clients were asked whether they had disclosed their HIV-positive status and ongoing disclosure counselling provided to those who had not yet done so.

Non-disclosure of one's HIV-positive status could affect the behaviour of an individual, as mentioned by the PNs who participated in the current study. These participants reported that some ART clients did not want to be seen at the health facilities by others, whereas others faced a challenge asking for time off from work for visiting the ART facility. Brittain et al. (2018) maintain that non-disclosure had been identified as a barrier to adults' ART adherence, as these clients did not attend the clinic regularly because they feared being seen by others from their workplaces and/or communities. Azia et al. (2016) confirm that disclosure of one's HIV-positive status and the implied readiness to live with the disease remains a difficult process.

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Most clients, who participated in that study skipped ARV doses and/or missed appointments because they were afraid that their HIV-positive status could unintentionally be disclosed if they were seen in queues at the ART clinics (Azia et al., 2016).

Azia et al. (2016) further indicate that the findings from their study in South India revealed that most clients who did not disclose their HIV-positive status, travelled long distances to obtain anonymous treatment from clinics far away from their homes/workplaces and hid or skipped pills to ensure that their family members and employers did not know about their HIV-positive status. Disclosure could influence ART adherence negatively or positively, given that those clients who had disclosed their status to family members, friends or religious groups, gained some form of social, physiological, economic and spiritual support, which motivated them to enhance their adherence to ART, as compared to those who did not do so (Azia et al., 2016).

Hall, Sou, Beanland, Lacky, Tso, Ma, Doherty and Tucker (2018) report that clients' fears concerning HIV-positive status disclosure increases clinic avoidance behaviours, including missing of ART appointments. The study by Azia et al. (2016) conducted in Tanzania, support the observation made by Hall et al. (2018), reporting that a 60-year-old female pointed out that 'when people were often seen in the community having lengthy discussions with any HIV-care provider, automatically that person's HIV-positive status was assumed and this resulted in some clients missing their important appointments with HIV-care providers'.

The study by Azia et al. (2016) also established that some clients in the community stopped going to the ART clinic because they did not want others to know about their HIV status. Consequently, some ART clients attempted to buy ARVs from those who had already collected their ARVs, promising to pay for and/or to return the ARVs after they managed to collect their own medication. Similar behaviours were identified during the current study's interviews with ART clients, who mentioned that 'they played games with ARVs', where they collected ARVs at various clinics and shared the medication with others.

4.3.3.2 Poor client-provider relationships

How health care providers interact with clients, and vice versa, has a significant role in the health outcomes of clients. The current study identifies challenges associated with poor client-provider relationships. Some participating PNs reported that poor client-provider relationships were a potential factor contributing to the missing of adults' ART appointments. However, most indicated that clients coming to ART facilities displayed negative attitudes towards health care providers. These participants mentioned that some ART clients made nasty comments such

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as that the nurses were slow or even redundant as they were just lingering around doing nothing. Some of the comment made by the current study's participating PNs were:

PN6*: When I am still busy with one client, the other clients in the queue are making nasty comments. Some say the ugly fat nurse is taking too long, some mention that they are hungry they want to leave, whereas others will say they hate coming to the clinic just to accompany the nurses because they are boring.*

PN5: Other clients will make comments saying nurses are poor, they earn because of us.

Some participants in the current study (PNs) indicated that even though the clients did not make any comments, one could pick up their negative attitudes from their non-verbal gestures, creating a barrier between the providers and clients. These participants added that clients who had poor relationships with the health care providers were more likely to miss appointments, compared to those who had positive relationships with the health care providers. Furthermore, participants stated that clients with good relationships, communicated well and made it easy to arrange alternative dates, if necessary. One participant highlighted:

PN10: *Those with negative attitudes even though I knew that the date does not suit them I keep quiet about it continuing giving them the appointment date.*

One participant indicated:

PN7*: One client indicated that he cannot take treatment at his nearby clinic because the staff of that clinic, did not communicate well with them. Always the nurses were shouting at them [ART clients].*

The findings of the study current study revealed that not all ART clients had problems with health care providers, and some health care providers had problems with ART clients.

One participant (PN14) said:

O*ther staff they hate HIV-positive clients and you can feel the way they comment about them. Others they perceive HIV as a punishment for wrong doing and they thought they are immune to HIV, meanwhile most nurses are dying of HIV due to their negative attitude.*

Another participant responded:

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PN9*: To tell the honest fact hypertension and diabetics clients are better than HIV-positive clients. HIV-positive clients have many demands, they want all the treatment, and they want us to feel pity for them, so I don't like them much, I only give them ARVs and keep quiet.*

In the interviews for this study, clients complained about the attitude of the health care providers, but the health care providers also complained about ART clients, citing that they were uncooperative, rude and showed no respect.

Dang et al. (2017) and Brenk-Franza, Straußa, Tieslera, Fleischhauer, Schneider and Gensichen (2017) argue that patient-centred care is an essential contributor to positive patient care experiences. Several studies found that client-provider relationships posed challenges because most health care providers did not understand the clients' role in the treatment planning process. Kvæla, Debesay, Langaasa, Bye and Bergland (2018) report that client engagement has developed from a marginal phenomenon to a well-established concept in public welfare, both nationally and internationally, and strengthened through laws and regulations. Moreover, Mgbere et al. (2017) maintain that the client-provider relationship is privileged and complicated. This is why most health care providers and clients do not realise its significance.

Spooner, Salemi, Salihu and Zoorob (2016) demonstrate that the core of client-provider relationships is good communication. If the health care provider avoids communication during sessions, client outcomes are compromised. Cerier, Beal, Chakedis, Chen, Paredes, Sun, Cloyd and Pawlik (2018) concur with other researchers in that client-provider relationships are an important element of health care delivery influencing treatment outcomes. A shared decision-making model (Cerier et al., 2018) enabling clients to make decisions in conjunction with their health care providers has been promoted and covers aspects such as mutual respect, trust, support, and empathy as well as cognitive factors such as information gathering, client education and counselling. Cerier et al. (2018) conclude that improving client-provider relationships may consistently demonstrate a small but significant effect on health care outcomes.

4.3.3.3 Clients' long waiting hours at health care facilities

Long waiting hours at health care facilities affect not only the quality of service provided to the client, but also the clients' motivation to continue with their care, especially those clients with chronic conditions. The central core of the Self-Determination Theory (SDT) by Deci and Ryan (2015) is autonomous motivation. These authors stated that autonomous motivation makes a

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person act willingly, through their own volition and fully endorse to commit to responsibility for their actions. Some chronic clients, like ART clients, become less inclined to visit a health facility regularly over time. Several reasons negatively affecting clients' ART clinic attendances discussed in this study, included long distances to travel to clinics, hunger, lack of disclosure of HIV-positive status, poor engagement and poor provider-client relationships.

Some of the comments made by PNs, who are participants in the current study, included the following:

PN5*: I have once noticed someone who was in the queue in the morning, but at the end the file was 'unattended'. I personally called the client trying to find out...only to discover that the client left indicating that the queue was too long, and he waited long enough, and he was rushing to work.*

PN9*: Other clients grumbled and quarrelled while in the queue indicating that the line was moving slowly. There is nothing I can do as a nurse because I do everything, collect blood, record, do examination and continue with counselling at the same time. Clients must learn to wait.*

PN14: Sometimes you find that you are alone like today, while still busy, comes maternity case, everything must stop to attend to the maternity client. Clients do not want to understand that we prioritise cases hence they start to make noise and others leave the facility….

These PNs' comments were confirmed during the interviews conducted with adult ART clients during the current study. Some ART clients supported the PNs' comments indicating that the clients became bored by staying at the facility the whole day. Some clients changed dates deliberately and came on Mondays instead of Thursdays *'…*that is why on that on Mondays the facility is having a high volume of clients resulting in long queues and longer waiting times'*.*

A participant (PN13*)* said:

Even though we book clients in different time slots, they resist to change from culture and norms. They come as early as four o'clock in the morning to the clinic. Yes! Clients will be bored because they come to the clinic early and they felt that they have waited for a long time.

Long queues and waiting hours are contributory factors to the missing of appointments in the current study. Participating PNs indicated that some of the reasons for the long waiting hours

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were beyond their control. Egbujie et al. (2018) mention that long waiting times are a main source of dissatisfaction for patients attending public health care facilities in South Africa. Most facilities have to cope with large numbers of clients, not only HIV-positive clients, but all clients in need of care facilities, most of whom have limited resources. Jiang, Abouee-Mehrizi and Diao (2018) mention that appointment scheduling is mainly used to manage access to services by matching the existing resources with the most suitable demand. In their study, most clients did not honour their booked times but came at one time, causing huge demands on existing human resources and aggravating the long queues and long waiting hours.

Soremekun, Takayesu and Bohan (2011) stipulate that waiting times are a key component to determining clients' satisfaction levels, and significant efforts are necessary to reduce waiting times and improve the efficiency of health services. In a study in Australia at one hospital's emergency department, it was observed that a client's psychological processing highly influenced waiting times. Only a few clients could accurately estimate their waiting times, while the majority overestimated their waiting times (Soremekun et al., 2011).

The study in Tanzania by Azia et al. (2016) found that waiting times reached a maximum of ten hours to access ARVs and contributed significantly to reducing clinic attendances, affecting adherence. These authors urged for more focus on clients' lack of confidence in health care providers as a major concern, because of its potential to impact negatively on clients' abilities to access ART in future.

Soremekun et al. (2011) state that there is a need to improve health care providers' communication skills, enabling clients to understand the complexity of their medical history, the tests ordered, what their involvement in their care and its processes while visiting the health facility. In this way, clients will understand that everyone has different health care service needs and better tolerate long queues and understand the potential benefits for their treatment outcomes.

In conclusion, the findings of PNs indicated that:

- Experiences of PNs concerning the factors contributing to adults' missing of ART appointments varied depending on the clients' culture and behaviour
- Professional nurses observed that clients' failure to disclose their HIV-positive status to family members has a major impact on the support they received.
- Professional nurses acknowledged that they engaged poorly with clients during clinic visits.

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- Clients' involvement would facilitate the selection of return dates suiting each and reduce the many social and environmental challenges impacting clients' adherence to their ART appointments.

4.4 RESULTS AND DISCUSSION OF FINDINGS: COMMUNITY HEALTH WORKERS

Profiling of the CHWs will be outlined first, followed by a table presenting the themes and concludes with reporting the results and discussion, including a literature control.

A total of 36 CHWs participated in the study. Of the participants 86.1% (n=31) were females and 13.9% (n=5) were males. Most CHWs' ages range from 25–49 years (80.1%; n=29) but 11.1% (n=4) were older than 50 years. Of the participating CHWs, 44.4% (n=16) had 6–10 years' experience, 25.0% (n=9) had 11–19 years' experience, 22.2% (n=8) had at least 20 years' experience while only 8.3% (n=3) had up to five years' experience in their current organisations. The educational levels of the participating CHWs' were: 41.7% (n=15) had matric (grade 12), 50% (n=18) had post-matric qualifications while only 8.3% (n=3) had merely primary level education. Some of the participating CHWs (52.8%; n=19) had never received training for providing home-based care but had received in-service training provided by their organisations, and 47.2% (n=17) had received formal training in community home-based care. Few CHWs (25.0%; n=9) were trained in the management of HIV-positive clients in the community. Only 30.5% (n=11) had received adherence counselling training as shown in Table 4.6

Table 4.6 Demographic profile of Community Health Workers (N=36)

Items	Community Health Workers				
Number of FGD				5	
Gender	Males			5	
	Females			31	
Total				36	
Total FGD Number	FGD1	FGD2	GGD3	FGD4	FGD5
	8	7	6	8	7
Age	18–24yrs	25–35 years		35–49yrs	Above 50 years
	3	12		17	4
Number of years' experience in current organisation	0–5yrs	6–10yrs		11–19yrs	Above 20yrs
	3	16		9	8
Level of education	Never attended school			0	
	Only primary level education			3	

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	Grade 12 (matric)	15
	Post-grade 12 qualifications	18
Training status	Received training on comprehensive care management and treatment support of HIV-positive clients	9
	Received training on adherence counselling	11
	Received training on community home-based care	17
	Never received training on community home-based care but had received in-service training	19

In the current study, a CHW is a member of the community but employed by a Non-Profit Organisation (NPO) or Non-Government Organisation (NGO), and responsible for caring for clients in the community. Nxumalo, Goudge and Manderson (2016) concur with this statement by indicating that CHWs affiliated with community-based organisations are central to the implementation of Primary Health Care (PHC) in the district health services of South Africa.

Community Health workers have various obligations, including the linking of a community with PHC services and supervising chronic clients in the community (Nxumalo et al., 2016). The WHO (2017) specified that the use of CHWs is one strategy to address the growing shortage of health workers, particularly in low-income countries.

The persistence of health inequities in low- and middle-income countries has been a strong driver for implementing changes in health systems and mechanisms for providing health care (Nxumalo et al., 2016). This has also fostered strategies that co-opted various sectors, other than health, to address the social determinants of health. While there are difficulties to ensure that synergy and collaboration continue to persist at national policy levels, PHC has been emphasised as being central to achieving better health outcomes (Nxumalo et al., 2016).

Nxumalo et al. (2016) highlight that CHWs are commonly identified as critical for the delivery of PHC services because of their capacity to work closely with vulnerable communities and individuals and to address problems arising from limitations in the number of trained health workers. The CHWs are responsible for the growing number of HIV-positive clients in communities. Five FGDs were conducted with CHWs during the current study. Chapter 3 discusses the composition and sampling of the FGDs. During the FGDs with CHWs, themes and sub-themes emerged, are illustrated in Table 4.7.

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Table 4.7 Themes and subthemes from the findings of focus group discussions conducted with community health workers

Themes	Sub-themes
Challenges encountered in in monitoring clients in the community	• Clients' improper linkage to care and poor referral system • Difficulty in monitor clients' compliance
Challenges encountered to support clients in the community	• Clients' non-disclosure of their HIV-positive status to their family • Clients' and family members, denial of access for support
Client-related factors affecting adherence to appointments	• Forgetfulness and fatigue • Alcohol and substance abuse • Emotional distress and denial • The use of alternative medicines and existing cultural and religious factors

4.4.1 Challenges encountered in monitoring clients in the community

Fettig, Swaminathan, Murrill and Kaplan (2014) assert that the HIV epidemic continues to be a major global issue exerting a burden on health facilities. Since 2015, the scale-up of ART in southern Africa has continued (Meintjes et al., 2017). Once ART initiation clients are outpatients, they only go to the ART clinic to collect treatment on given dates. During the FGDs conducted with the CHWs, they described how ART clients are referred from the clinic to the community and emphasised that many of these clients become lost in the community due to several challenges. These CHWs' information gave rise to the following subthemes (as indicated in Table 4.7)**.**

4.4.1.1 Clients' improper linkage to care and a poor referral system

During the FGDs, the CHWs mentioned that a poor referral system and improper linkage to care posed serious challenges to the management of ART clients in the community. All ART clients should be allocated to specific CHWs for further management in the community. When the researcher asked how the clients were referred and linked to the CHWs' care, the following answers were supplied by the CHWs:

FGD A5: *There is no actual linkage to care from the clinic to us in the community. We just identify the clients when we do home visits and then register them in our register.*

FGD C7*: ... there is a serious challenge because we don't report to the clinic on a daily basis. We only go there once a month during the stakeholder meeting. ... clients are just told to*

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expect a visitor who will be checking them for compliance without me being notified. We only find the clients ourselves during household visits. Then we register them in the carer's profile register.

FGD B1: *There is no linkage and referral strategy between us and the clinic. We are only informed about a client who has already defaulted and [they] want us to trace.*

FGD E6*: The nurse at the clinic only give us the list of the clients who are not coming to the clinic, those who defaulted or lost-to-follow-up.*

FGD D3*: Every Friday, the data capture gives us the list of TB clients so that we can allocate ourselves who will be caring [for who]. Other clients with other conditions, excluding HIV, is very rare, unless they want us to trace them.*

On the contrary, some CHW participants replied as follows:

FGD D8: *Every day in the morning, we report at the clinic and sign the time register before going out. After that, we ask the data capture to give us the list of clients who were initiated a day before and even during the weekend. So, we decide among us who will be caring [for] who looking at the geographic area. After that, we go and meet the client and do self-introduction, [explaining the] main purpose for the visit and our role to him/her.*

Participating CHWs were further asked how clients linked to their care. The researcher wanted to establish whether there are formal written documents for referrals, or any treatment care plans discussed with them. The responses were as follows:

FGD C2: *There are no formal referral letters. Nurses sometimes tell us verbally that we need to visit so and so. No treatment plan or instructions on how we should care [for] that client. We just go and visit them like any other client and check for side-effects and whether the client has taken the treatment. Only that.*

FGD B4: *Nurses do not allocate the clients for you. Hence there is no referral letter or care plan. We only manage the clients based on our experience acquired during the service. That is why [it] is very difficult to know what is it that we should achieve while monitoring the client.*

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FGD E1: *Only clients from the hospital have discharge letters which document the treatment and the next visit date and where should the client go for the next check-up. Most clients do not take the letter to the clinic, hence most of them are not known in the clinic.*

FGD D3: *I only knew about … after I have been called by one of the family members and found the client was in the critical state.*

FGD C8: *We sometimes identified clients maybe after a while when we conduct door-to-door campaigns with the department having their HIV treatment. It is how we learn about the status.*

Based on the current study's participating CHWs' responses, ART clients are not properly linked or referred to CHWs from the clinics. Wåhlberg, Valle, Malm, Hovde and Broderstad (2017) explain that referral constitutes the handing over of care from one caregiver to another. To ensure a high-quality, sustained treatment process, a referral letter should contain all the client's necessary information and be shared among other members caring for the client (Wahlberg et al., 2017).

Payne, Razi, Emery, Quattrone and Tardif-Douglin (2017) describe a CHW as a frontline public health professional closely involved in the community he/she serves, enabling liaison between health care and community organisations to facilitate access to high-quality client-centred care. Functionally, CHWs establish connections between clients, communities and social services (Payne et al., 2017). Referral and linkage systems should be sustained so that clients in communities receive continuous care. If these systems are inadequate, it can negatively impact on ART clients' adherence to appointments because most clients will lack supervision without the assistance of CHWs.

4.4.1.2 Difficulty in monitoring clients' compliance

The CHWs participating in FGDs during the current study believe that poor referrals and clinic-community linkages impact negatively on adults' adherence to their ART appointments because the CHWs were unable to monitor compliance of those clients of whom the CHWs were unaware. The CHWs also state during the FGDs that they require training to manage the ART clients holistically as they found it difficult to understand some of the instructions given to these clients by the nurses at the clinics. Participating CHWs also mentioned that ART clients require behavioural modifications to comply with their treatment plans, but the CHWs had limited skills and knowledge in this regard. Some participants (CHWs) mentioned the following:

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FGD B4: *We only use our little knowledge to advise the clients on how to take the treatment and sometimes we go along with what the client is saying because there are no documented instructions even in the client-retained card except the return dates.*

FGD E3: *I have asked one client why the pill bottle is still full of medication. He said that he is taking them once a day like others. It was difficult to convince that client that the current practice is incorrect because there was no instruction written in the client's retained card or even on the pill containers. When I tried to intervene by explaining the correct instruction, I was told that I am not a nurse. The client will do what he is told by the nurse. He chased me and told me not to come back as I know nothing.*

FGD E1: *I am not sure what to record in my register so that I can give feedback about clients' progress and what I have achieved as there are no treatment care plans. I only document the client's name, indicate no side-effects [occurred] and indicating that the client is taking treatment well, meanwhile, there is no instruction on how many pills to take at what intervals. The client I am talking about was having a lot of treatment. It has bored me to such an extent [that] I visited the clinic to find out about his treatment instructions. I realised that the client was supposed to take [pills] twice a day, but he was taking it once daily. I have asked the client to go to the clinic the following day, but he refused and stated that he would go after he has finished the tablets.*

FGD B5: *You find that the client-retained card there is no date written on it. So, it becomes impossible to identify whether the client has missed the appointment or not. Although some remember the dates, but [the] majority will tell you that they have forgotten. In this situation it is difficult because sometimes there are no tablets to count, the client will tell you that the children locked the cupboard where the tablets are kept.*

Following treatment instructions is crucial to achieving favourable ART outcomes. The CHWs encounter difficulties in monitoring whether the clients adhered to their treatment plans without these instructions. Pham, Romero, Parnell, Anderson, Crowe and Luchester (2017) mention that regular monitoring of ART clients is obligatory to ensure treatment benefits and long-term effectiveness and sustainability of ART programmes. Some participants (CHWs) mentioned that they became frustrated when faced with the challenge of supporting their clients without adequate knowledge due to limited or no information in the patients' treatment plans, client-retained cards and medication containers.

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Seutloali, Napoles and Bam (2018) mention that CHWs faced several challenges including no clear definition of the scope of their work, challenges of unavailable guidelines/referral tools and how this affects the implementation of services in the community.

Participants (CHWs) in the current study mentioned that it was hard for them when one of their clients died as a result of the failure to assist the client in time. One participant added that CHWs sometimes witnessed the disease progression in their clients' health without adequately understanding the reason for the decline. The CHWs concluded by indicating that it would be much better if they had some guidelines and trained more frequently to improve their management skills and knowledge.

4.4.2 Challenges encountered to support clients in the community

There are many challenges faced by CHWs when caring for ART clients. During the FGDs in this study, the participating CHWs mentioned that poor referral and poor linkage systems affect their management of ART clients. Apart from these challenges, the study identified other barriers experienced by CHWs when they conducted home visits. Those barriers emerged as subthemes as listed in Table 4.7, and include:

4.4.2.1 Clients' non-disclosure of their HIV-positive status to their family members

Professional Nurses also mentioned the issue of disclosure of ART clients' HIV-positive status interviewed during the current study as discussed in Section 4.3 of this chapter. Non-disclosure hinders treatment and affects adults' adherence to ART appointments. The interviewed PNs mentioned that clients hid their HIV-positive status from their family members, and as a result, their family members could not encourage regular ART clinic visits. The CHWs participating in the current study's FGDs also experienced the same challenge when visiting the clients. During the FGDs, they shared the following experiences:

FGD C2: I *visited one client who had reportedly missed three consecutive visits, and when I arrived, I found the whole family seated outside and they were enjoying their tea. I greeted them and told them that I was there to see S… The client concerned quickly replied that they are all fine. No one is having TB or HIV in the family. Her mother added by saying S…. has been healed from the treatment of ulcer received from the clinic. I then realised that S…… did not disclose the status. I requested the phone numbers of S…. so, that I can call or send the message that she is wanted at the clinic, but she refused. Then I left but told S…. if she gets a chance, she must go to the clinic for a follow-up visit.*

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FGD D6: *I have been warned by a client stating that I must not to come to his home because his wife does not know his status.*

Similar challenges were also reported by other participants (CHWs) who indicated that some family members or clients themselves stated a different diagnosis. Some CHWs revealed that most of the conditions the clients and/or the family members claimed to have were diabetes, hypertension and peptic ulcers. Apart from medical conditions, other participants (CHWs) indicated that some clients implied that they were bewitched while others said that they were possessed by demons explaining why they were very sick (FGD E5).

Other comments from participants are as follows:

FGD A4: *M. knows her status, and she is on ARVs. I was surprised when one client's family member told me that the ulcer treatment M… is taking from the clinic does not help her. She needs rituals to be performed so that she can become a 'sangoma' [traditional healer]. The family have the believe that clinic medication is the one that is worsening M's situation.*

FGD A7: *I went to support D…… and I did not find her. When I ask her mother about her whereabouts, she responded that she went to the clinic to collect medication for headaches. I further extended my question by asking does she go to the clinic every month, the mother replied that she was supposed to go every month. The mother added by telling the participant that the nurses at the clinic told D... that there is a blood clot in her brain.*

Another participant said:

FGD E5: *The client told her mother that she has something in her stomach, and she must not drink the medication from the clinic because she is feeding that thing in the stomach. The mother claimed that her child was prophesied by the pastor from the church she was attending.*

Some participants (CHWs) mentioned that another reason for missed appointments was because some clients waited for their family members to be unavailable so that they could get a chance to go secretly to the clinic. The issue of non-disclosure affects not only the missing of ART appointments but also the clinical outcomes due to poor adherence to medication, as the clients hid from others when taking the medication (Brittain et al., 2018; Azia et al., 2016).

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Azia et al. (2016) also report a similar pattern in SSA countries with an increase in the use of traditional medicines. People used holy water and prayers to hide their status so that others would not link their condition to HIV/AIDS.

4.4.2.2 Clients' and family members' denial of access for support

The following subtheme is related to challenges of disclosure, fear of stigma and discrimination. In this situation, both the family members and clients were aware of the clients' HIV-positive status. During the FGDs in the current study, one participating CHW (FGD A7) mentioned that CHWs were associated with TB and HIV by community members. Another participant (FGD A1) added that 'the community members when they see CHWs visiting a household, they jump to the conclusion that that family visited is affected by HIV or TB'. Participants (CHWs) mentioned that there was a stigma attached to them because of the nature of the work they do. Some community members believed that all CHWs were HIV-positive.

Some responses include the following:

FGD A1: *Yoo!!! When they see us coming, they closed the house and when you go there and knock, they keep quiet or sometimes they will answer while in the house stating that Z…. is not at home, meanwhile you saw her while coming.*

FGD A5: *I was told not to come again; they can manage their brother and if needs be they will take him to hospital.*

The CHWs who participated in the current study find it challenging to supervise such clients because they do not have any access to them. During the current study's interviews with ART clients, some acknowledged they forgot their ARVs and/or clinic appointments, while others reported challenges of reading and others needed constant support. The CHWs, during FGDs, reported that when visiting ART clients, they aimed to resolve such challenges. It was also reported by the participants (CHWs) that clients, who had challenges in adhering to their ART appointments were those who were not 'attached to' any CHW.

Islam, Shapiro, Wyatt, Riley, Zondwiak, Ursua and Trinh-Shevrin (2017) mention that CHWs are uniquely positioned to improve clients' health outcomes. Clients as well as family members receive counselling during home visits benefitting them all. The CHWs extended invitations to contacts or exposed people in the family to get screened at a clinic. Islam et al. (2017) support

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this statement by indicating that CHWs are frontline health workers who act as ‘bridges’ between the community and health systems.

Community members might not understand the role of the CHWs. Hence, for them to be effective in health promotion and prevention efforts, a shared culture with their communities is critical (Shahidi, Sickora & Nagurka, 2015). However, Islam et al. (2017) mention that it was unclear as to which cultural and social elements should be shared for CHWs to be effective. Also, personal characteristics impact a CHW's ability to build trust and rapport with a community member. A few studies evaluated the relative importance of interpersonal relationships between community members and CHWs (Islam et al., 2017) and conclude that some studies established that socio-cultural characteristics of CHWs had limited significance, but trust was most essential. Research by Shahidi et al. (2015) and Islam et al. (2017) imply that the role of the CHWs should be understood widely by the community so that they could access CHWs’ services that are vital to improve their health status.

4.4.3 Client-related factors affecting adherence to appointments

Forgetfulness, clients’ mistakes, clients feeling better, family and religious issues and the use of alternative medications are some of the client-related behavioural factors influencing adults’ adherence to their ART appointments recognised during FGDs in the study conducted with CHWs. Clients also reported similar factors during the individual interviews with ART clients and PNs.

The following aspects emerged as subthemes: forgetfulness and fatigue, alcohol and substance abuse, emotional distress, the use of alternative medications, cultural and religious related factors. Goffman, Harris, May, Milicevic, Monte, Myaskovsky, Rodriguez, Tjader and Vargas (2017) add that the existing literature suggests that patients’ non-attendance might be caused by forgetting their scheduled appointments and no-show rates might reduce by using patient reminders, such as phone calls, emails and text messages.

4.4.3.1 Forgetfulness and fatigue

Forgetfulness and fatigue were reported by some participating CHWs to cause ART clients to miss their appointment. Chapter 2 highlights these factors revealing that ART clients sometimes became tired of taking medications and/or going for clinic visits, whereas others forgot to take their medications correctly. Some clients forgot to go to the clinic on the scheduled date because they felt better. Some CHWs reported similar situations reported during the current study’s FGDs. Some responses from CHWs included:

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FGD A1: *One of my clients explained that she sometimes forgets completely to go to the clinic. She mentioned that the client indicates that he only looks at the date immediately while still in the clinic. When I arrived at the home, she put the card away in the hiding place so that no one can see. She also admitted that the client does not have a reminder from his alarm clock or cell phone.*

FGD E3**:** *My client claimed that she is mostly busy during the day, she goes around the village selling vegetables, that is why she forgets to go to the clinic.*

FGD B6: *One client claimed that the reason she forgets to go to the clinic is that she feels better; that is why she sometimes forget that she is ill.*

FGD C5: *Most of the clients, when asked why missing the appointments, they indicate that they get tired of drinking medication every day that is why they sometimes go for a drug holiday. No specified reasons mentioned by them.*

FGD E6: *They cannot read, while others state that their children did not remind them in time and whereas other clients say that they were having social problems.*

Bauleth et al. (2016) support the CHWs' statements presented during the current study's FGDs by indicating that patient-related factors such as forgetfulness and a lack of commitment contributed to non-adherence. Bauleth et al. (2016) add that most patients cited the reason that they mostly forgot when doing other tasks.

Vance, Fazeli, Moneyham, Keltner and Raper (2013) explain that forgetfulness could be identified subjectively (by the client him/herself) and objectively (observed by health care providers). In the case of subjective forgetfulness, a person persistently fails to remember information or conversations that interfere with his/her daily functions. This study's findings revealed mainly subjective forgetfulness because ART clients sometimes forgot their return dates and/or the instructions of how to take their medications according to the CHWs' reported experiences. Bauleth et al. (2016) conclude that as HIV might have adverse effects on the brain, an effective strategy to mitigate forgetfulness and cognitive problems such as fatigue should be in place. Therefore, strict monitoring of ART adherence remains the most effective approach to preventing problems of forgetfulness and improving cognitive functioning, thereby improving adherence to ART appointments.

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4.4.3.2 Alcohol and substance abuse

Most participating CHWs in the current study admitted that many of their clients drank alcohol and smoked while on ART. These CHWs observed that heavy drinking and smoking were factors hindering clients from taking their ART as prescribed, as well as from going to the clinic for follow-up visits. These participants (CHWs) reported that some ART clients drank alcohol almost every day, even on weekdays, and those who drank alcohol and smoked only occasionally (mostly only during weekends) had similar tendencies regarding missing their pills and ART appointments.

The following are some of these participating CHWs' responses:

FGD E7: … *even though I can go in the morning, I find my client already drunk, but he respects me and appreciates my visit. When checking the clinic card, I sometimes find that he already skipped the clinic visit. Then [I am] telling him that he has skipped the date, politely so he will promise to go the next day.*

FGD C5: *I have profiled the dates of Mr J…. A day before I went to remind him about that appointment date. I believe I have wasted my time because I already found him drunk with his other family members.*

FGD B3*: I really do not understand because the client will tell me that she does not have money to buy food and pay for transport. But every day she has money to buy alcohol. I have tried to ask where does she get money to buy alcohol? The reply I have got was that 'I am drinking on account; I am paying during month end'. Sho!!*

Another participating CHW (FGD B3) reported that one client indicated that she was drinking because she did not want to think too much. This client also used drugs and was a sex worker. A similar situation was reported by another participant (FGD B5) when she said her client indicated that she abused substances so that she could perform her sex duties.

Participating CHWs emphasised that most of their clients who forgot their ART clinic visits are those who abuse alcohol and substances (such as Dagga or Marijuana) as compared to non-alcohol and non-substance users. These participants reported that the ART clients' use of alcohol and drugs resulted in poor cognitive functioning as some forgot their ARVs and/or clinic appointments, others lied about their ART adherence or claimed that they had everything under control whereas others became moody and irritable indicating that they do not want a 'baby sitter' to check-up on their behaviour.

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One participant (FGD D1) mentioned that a 33-year-old female client in his care made the following testimony during a support visit:

Yoo! I was supposed to go to the clinic last week. I could not go because the nurses will find out that I was drunk. I thought I will go this week, but I am drinking once again. I don't want to be seen in this state.

This participant said that when he tried to determine the client's reasons for drinking, he got the following response:

Aah! I just drink because there is nothing to do, I am not working, am poor what else must I do.

Different people have different reasons for abusing alcohol and substances. Some mentioned reasons like lack of family support, whereas others reportedly used alcohol for psychological reasons, but some people abuse alcohol and substances 'as their hobbies' according to some CHWs' statements.

Substance abuse among ART clients could have far-reaching consequences on their ability to maintain therapy, and also aggravate their difficulties in receiving any social or family support that could motivate them to adhere correctly to ART. Considerable research examined the consequences of autonomous motivation, controlled motivation and motivation in various applied settings, including homes. Across these domains in many countries, the outcomes are more positive when the social environment had been supportive and when the targeted individuals are autonomously motivated (Deci and Ryan, 2015).

Alcohol and substance abuse are known to impair peoples' reasoning and could, therefore, negatively affect adherence. Gurung, Ventuneac, Cain, Mirzayi, Ferraris, Rendina, Sparks and Parsons (2017) as well as Frost, Matson, Tsui and Williams (2019) mention that substance and alcohol use among HIV-positive persons exacerbates health problems and could have synergistic impacts on health. Whereas Kahler, Liu, Cioe, Bryant, Pinkston, Kojie, Onen, Baker, Hammer, Brooks and Patel (2017) argue that their USA study revealed that about 61% of people living with HIV consumed alcohol during the preceding years, and some reported drinking heavily.

Kahler et al. (2017) describe heavy drinking to be strongly associated with non-adherence rather than the number of drinks consumed per week. Several studies reported that heavy drinking is associated with poor health outcomes. Kahler et al. (2017) also mention that no

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study formally tested whether there is an association between heavier drinking and poorer HIV outcomes and reduced ART adherence.

Probst, Parry and Rehm (2018) maintain that one factor, possibly contributing to socioeconomic differences in the HIV/AIDS burden, is alcohol use. Probst et al. (2018) report that a recent study nationally in South Africa found that alcohol is a psychotropic depressant of the central nervous system that might impair decision-making by diminishing the person's perception of risk and reducing inhibitions.

As mentioned by Probst et al. (2018), clients who use alcohol have diminished perceptions of risk and do not calculate the consequences of poor adherence. From the study done in SSA and other countries, Probst et al. (2018) report that the findings showed that HIV-positive participants were significantly more likely to consider unprotected sex when under the influence of alcohol, increasing the chances of HIV transmission and reinfection which could impact negatively on ART outcomes.

The reasons why HIV-positive clients abuse alcohol and substances is widely researched in the literature. Many studies concentrated on the consequences of unhealthy alcohol and substance use among PLWHA. Limited information found during the literature search associated missed ART appointments with alcohol and substance use. Thus, there appears to be a need to investigate why ART clients resort to alcohol and substance use and how such use impacts on adults' compliance with their ART appointments.

4.4.3.3 Emotional distress and denial

In the current study, CHWs who participated in FGDs mentioned that clients who experience emotional distress are those who encounter challenges with adherence to ART appointments. During the FGDs conducted with CHWs, the CHWS reported that some clients under their care were unable to cope since they had discovered their HIV-positive status. These clients claimed that there was much attached to an HIV-positive status; hence, some became depressed.

Participants' responses were as follows:

FGD A8: *Denial…. One of my clients does not believe that she is sick. She kept on saying that the tests done at the clinic were not clearly visible. When I go another day, she changes the story indicating that it is not possible … Sometimes she cries when engaging with her trying to help her. I then realised that she might be depressed.*

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Further questions were asked as to what the participant (CHW), what had done in this situation. The response was:

FGD A8: *I have mentioned this situation during debriefing session with my colleagues. I was advised to report the matter to the nurses at the clinic. … when I explained my experience about my client to nurse…, I was told that the client is known and there is nothing they can do about it. If she does not accept her status, it is her problem. I was told to leave her alone. She will come around because the virus is getting bigger and bigger daily.*

Another participating CHW (FGD C5**)** described her experience as follows:

The one I come across she got infected with her first sexual experience, and worse became pregnant. She found out of her HIV status during antenatal booking, since from there she has never coped with her condition. She defaults treatment regularly. Her child is not taken to child health for immunisation, and the child is also HIV-infected.

A similar situation was also observed by another participant (FGD B6) when she mentioned:

My client attempted suicide three times due to depression. He was taken to the hospital several times, and now he is on mental health chronic treatment. The challenge with this client, when he got better, he skipped appointments and ARV treatment. He is mostly resuming clinic visits after being discharged from the hospital due to mental conditions.

Participant FGD A2 shared the following experience:

The wife of … left him after finding out about the status of her husband. Shortly after a year, she discovered that she is also HIV-positive. She denied being HIV-positive because she left her husband almost a year ago. She kept on saying it's not true, not her. She is angered. She agreed to be given treatment, but adherence to appointments was [difficult] because she is afraid of being seen by the husband who is also taking ARVs at that local clinic. One day during a support visit, I have noticed that clinically … regressed claiming that it is stress. Four months later … was found in the house dead.

Yang, Simoni, Shiu, Chen, Zhao and Lu (2018) reported that PLWHAs experience high levels of psychological stress, especially upon first receiving their HIV diagnosis. They might develop psychiatric reactions such as denial, hopelessness about life whereas family and society might

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neglect others. During the current study, CHWs reported that they had identified psychosocial challenges among clients with poor adherence to ART appointments. Some clients displayed anger, experienced a sense of unhappiness, depression and self-blame. Other participants (CHWs) indicated that clients who abused alcohol are those who had challenges to accept their HIV-positive status and used alcohol as a mechanism to cope with emotional stress.

The participants' (CHWs) experiences showed that there is a gap in managing the psychological problems of ART clients, especially during diagnoses and treatment initiations. The question arose as to whether HIV-positive clients received adequate counselling during the adherence preparation. Another question concerned the competency of the health care providers in preparing clients for ART initiations. During the literature search of the current study (presented in Chapter 2), it became apparent that there is little known about the reasons why clients miss their ART appointments. The current study's findings obtained during FGDs with CHW, indicate that psychological problems could impact negatively on adult clients' missing of their ART appointments.

4.4.3.4 The use of alternative medications and existing cultural and religious factors

The use of alternative medications among ART clients is the subject of extensive research. Various studies showed an increase in the daily use of alternative medications that pose a potential barrier to ART adherence.

Community Health Workers reported similar observations during the current study because some CHWs found that some of their clients who used medicines from traditional healers and faith-based prophets (such as holy water for cleansing their bodies). Other participants (CHWs) also mentioned that their clients admitted to taking mixtures from traditional healers while on ART. A probing question explored how this practice affected adherence to ART appointments, and the responses were as follows:

FGD E4: *One of my clients visited religious prophets for prayers. She stayed at the church for the whole week and she reported that during the praying ceremony they are not allowed to use medications, rather they should use a holy 'Muti' [traditional medicines]. They were made to believe that the virus will be washed away. She mentioned that her client told her the prophet told her and others that the HIV is a demon, if they take the holy 'Muti' while praying it will disappear. That is why she had to miss the appointment because the time she was supposed to return to the clinic was the time when she attended the church ceremony.*

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FGD E2 added the following:

E!! My client indicated that she uses both the ARVs and traditional medication but not simultaneously because she was told at the clinic not to be used simultaneously. So, it happens that the whole [week] she uses ARVs, the other week traditional medications. Thus, prolonged completion of ART medication occurs. So, she sometimes forgets the clinic return dates due to (having) extra supplies.

FGD A4 reported a different practice:

My client is using herbal medications from the promoters [people selling herbal medications], and she was told to reduce the doses of ARVs to give the herbs a chance to work. She was very aware that herbs do not cure HIV, but she has a strong belief that those herbs are the ones which assist her to stay healthy [rather] than ARVs. The clients resorted to using the herbs [rather] than ARVs. Hence, sometimes delayed collecting ARVs.

FGD A1 reported that his client was a 'sangoma' (a traditional healer). When the CHW reminded him about the clinic visit, the client responded by telling him that he would go when the ancestors told him to go. His client also told him that he used traditional medications if he ran out of ARVs, so he did not worry much about missed dates.

Participants were asked if they know which traditional medications and religious medications the clients were using. One response was:

FDG A3: *Yha! (hesitated). Some they will tell you that they don't know the name because the bottle is unlabelled, but the one I found told me that she is using 'Muringa'. The other one told me that he is using 'isi Hlambezo'.*

The findings of the current study indicated that cultural and religious beliefs outweighed the potential benefits of adhering to ART plans. Most participants (CHWs) experienced similar situations where ART clients defaulted on treatment and missed follow-up visits while practising traditional or religious rituals. The findings of the current study (in this subtheme) are similar to the findings of a study done by Nlooto and Naidoo (2017) in the KwaZulu-Natal Province of South Africa.

Nlooto and Naidoo (2017) claim that despite the progressive implementation of a successful public health sector ART programme in South Africa, several patients who were taking ARVs

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also consumed traditional African medicines and complementary and alternative medicines (not integrated into the national health care system).

Participants (CHWs) indicated that clients used alternative medications for different reasons, such as cleansing their bodies or chasing demons away. Similar reasons noted in the study by Nlooto and Naidoo (2017) stated that participants (patients) mostly used complementary alternative medications to treat or prevent a specific health problem such as reducing body heat and improving general health.

Most of CHWs never asked their ART clients what medications they were using. However, one participant (CHW) mentioned that most of the clients in their area used 'African potato'. Nlooto and Naidoo (2017) highlight that some patients in their study knew the types of traditional medications they were using, mainly *Imbiza* (traditional herbal leaves, wood barks, and roots) supplied by local African traditional healers, namely herbalists (*Inyanga)* and diviners (*Sangoma*) before ART and after ART and *Isihlungu Sama Indiya* (Indian herbs) supplied by Ayurveda (Asian) doctors and local markets.

A few participants (HCWs) in the current study, reported that some clients benefitted health wise from taking traditional medications, but other clients experienced adverse effects with the combination of prescribed ARVs and traditional herbal mixtures.

Lorenc and Robinson (2013) maintain that it is imperative that clinicians should be aware of clients' potential use of Complementary Alternative Medications (CAMs) and discuss this with patients, to improve ART adherence and identify potential safety issues. During the current study, the participants' (CHWs') contributions during the FGDs noted that not all clients encountered ART adherence challenges due to cultural and/or religious practices. Most clients agreed to use different forms of alternative medications concurrently with the prescribed ARVs, but never skipped a single dose of ARVs or ART appointments because of their interest in their health outcomes. As using ARVs and traditional medicines concurrently might cause interactions, research is required so that health care providers can inform their clients about possible ARV/traditional medicine interactions.

Lorenc and Robinson (2013) highlight that the impact of being HIV-positive on physical and emotional health might be worse than for many other chronic diseases. So, CAMs can still be used to address the complex health and social issues associated with living with HIV/AIDS, including stress reduction, relief of side-effects and symptoms, and boosting the immune system. Lorenc and Robinson (2013) conclude by highlighting that prayer, meditation and spiritual approaches might be used to provide an approach of understanding and coping with chronic illness and providing emotional support. It is essential that clinicians understand that

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these approaches are critical to patients, particularly within the context of patient-centred and culturally-competent care (Lorenc & Robinson, 2013). In this way, missing ART appointments could be reduced by those clients practising cultural and religious rituals.

4.5 SUGGESTED STRATEGIES FROM ALL GROUPS OF PARTICIPANTS TO ADDRESS MISSING APPOINTMENTS

During the interview, all participants were asked whether they have any strategy in mind that could minimise the missing of appointments by adult ART clients. The ART clients, PNs and CHWs suggested several strategies perceiving that it might be the solution to improve adherence to appointments. Some strategies from the research were similar to those identified during the literature review search. The strategies are summaries in Table 4.8 and 4.9.

Table 4.8 Suggested strategies for addressing missing of appointments

Approach types	Initial type	Frequency	Arrival of initial reminders	Responsible person
Reminder	SMS	Two reminders	1–2 weeks prior to appointment	Health care provider in the facility should be the one to remind the clients that are due for appointment looking at the booking list or the list generated from TIER.net system.
	Phone call	Two- and same-time reminder	1–2 days prior to appointment	
	WhatsApp messages	Two reminders	1–2 weeks prior to appointment	
Cancellation and rescheduling	By phone or SMS or by self	Once a month	Cancellation should be one to two weeks before appointment	The clients should be the one to inform the clinic about the cancellation and request the new date.

The method of using SMS, phone calls and WhatsApp messages were suggested mainly by ART clients and CHWs, and some clients mentioned that it would serve as a reminder to them and their caregivers. Others working clients mentioned that SMS would assist them in gaining permission from their managers. Also, the CHWs mentioned that these strategies are needed most for the clients who are having challenges related to forgetfulness. In contrast, these approaches were not supported by the PNs who stated that they lack resources to practice these methods. They further highlighted that their facilities do not have landlines, instead, they have speed dials that do not include ART clients.

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Furthermore, some PNs complained of a lack of data and free SMS available for the facility, hence the issue of SMS and WhatsApp messages were perceived as impossible. A few PNs mentioned that phone calls or SMS should only be for clients who continuously and regularly miss their appointments until they improve by adhering to appointments. In addition to the strategies highlighted in Table 4.8, the following strategies in Table 4.9 were also suggested by all groups of participants.

Table 4.9 Strategies to prevent missing of appointment suggested by participants

Levels	Strategy
Date allocation	Birth dates should be used for allocation of return dates so that it can be easy to remember (for example, if the person born on the 23).
	Consider a week after received social grants or salary/ wages.
Centralisation of the medication for farm workers	List for farm workers receiving ART compiled according to local areas. The community health centres should be responsible for prepacking the medications and allocate one mobile in the first week of the month to deliver the medication on various farms.
Distribution of medication by community health workers	Prepacked medications for two months' supply should be given to CHWs to deliver to clients who cannot reach the facility only twice in six months.
Client-retained card	Clients' retained card should be designed in the form of calendar format, and the date should be circled rather than writing it.
	The retained card should be similar to that of the TB management, where the client or the family member will tick on daily
Writing of return date	The return date should be written even on the pill containers with a permanent marker.
Implement and Internet-based country-wide	Professional nurses suggested that the department should install the Tier.Net system that records all ART client's movements and all issues of ARVs.

The participants suggested these strategies with the view to their solving the problems related to the missing of appointment by ART clients. Some are included in the strategy developed for this study. The finding of the study revealed many challenges and factors that contribute to the missing of appointments; however, not all will be applicable to resolve some factors or challenges. Goffman et al. (2017) created the model to predict patient's behaviour, and the result showed that a predictive model could be used across a variety of clinics to predict a patient's future no-show behaviour by incorporating variables such as patient demographics, appointment characteristics, and past appointment-keeping behaviour.

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Clients characteristics also play a role in influencing the missing of appointments. This study did not focus on whether these characteristics impact the missing of appointments. However, the little information identified during client selections is that most unmarried and younger clients tend to miss appointment as compared to older and married clients. Similar observations were established in the study by Goffman et al. (2017) that also found that older, married patients tend to show more often for their appointments.

Williamson, Ellis, Wilson, McQueenie and McConnachie (2017) indicate that most clients occasionally missed the appointments because of a crisis or other understandable circumstance. Therefore, there is a need to explore various strategies to minimise missing appointments. Some involve allowing patients only to book on the day, meaning that the client should be the one to inform the health care provider about the date that is conducive for him/her.

The study by Molfenter (2013) indicates that this project proposed requesting the health care providers to consider strategies such as reminder calls, behavioural engagement strategies such motivational interviewing or contingency management, reduce waiting-times, add capacity, create a welcoming environment through decorative changes and collaborate with referrers to reduce no-shows.

Reminder phone calls are a common practice used to increase appointment attendance. While the purpose of the reminder phone calls according to Williamson et al. (2017) is to prevent patients from forgetting appointments whereas, evidence-based behavioural engagement strategies attempt to make patients want to attend their appointments.

In contrast, Williamson et al. (2017) highlight that using reminder phone calls produced mixed results in reducing no-shows, but in general health, staff reminder calls reduced no-show rates from 23.1% to 13.6%. Goffman et al. (2017) also show the impact of reminder phones where it indicated that the ‘no-show rate was the lowest for the group that received reminder calls 24 hours in advance (9.9%) and the highest for the group that received reminder calls 72 hours in advance (15.89%)’.

Evidence-based behavioural engagement strategies involve contingency management and motivational interviewing which resulted in enhanced appointment attendance in the study by Williamson et al. (2017). Contingency management provides financial and other incentives for appointment attendance while motivational interviewing techniques seek to help individuals recognise and resolve their ambivalence about changing behaviour and builds internal motivation to attend their therapeutic sessions (Williamson et al., 2017).

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Another strategy in the study by Molfenter (2013) involved creating a welcoming environment and partnering with referral sources, and this revealed a reduction in no-show rates. However, these practices received limited attention in the no-show literature. There is evidence in the study by Molfenter (2013) that people seeking addiction treatment services are more satisfied with well-decorated, clean and orderly environments, and this encourages them to return to treatment services. This study never explored the reactions of ART clients to a welcoming environment.

4.6 POSITIVE FINDINGS EMERGING FROM THESTUDY

The study explored the factors contributing to the missing of appointments by ART clients in order to provide a strategy to reduce the missing of appointments by adult ART clients. Apart from the negative factors contributing to the missing of appointments identified during the interview sessions, there were positive findings that are important to report in this study because they are useful in developing the strategy. These positive findings are presented in the form of a summary instead of themes and subthemes.

During the introductory phase of the interview, the researcher examined how the CHCs operate from the three groups of participants. All CHCs open every day but only provide ART services from Monday to Friday. Only four CHCs extend the service to Saturday and Sunday to accommodate those working and with unforeseen challenges. Some ART clients participating in the study concurred and added that the clinic is open every day.

During the interview, the ART clients and PNs were asked about the availability of drugs. Most all the PNs agreed that ARVs are not the factor leading to the missing of appointments because they usually have the stock available and encounter no challenges ordering and receiving ARVs. No ART clients mentioned that he/she missed the appointment because of a shortage of ARVs, most instead indicated that they miss an appointment due to some of the other reasons discussed in this chapter.

The PNs interviewed were trained in Nurse Initiated Management of Antiretroviral Therapy (NIM-ART), and most CHWs in the management of HIV. The ART clients reported receiving counselling before starting ART treatment giving them an understanding of their condition. However, the study identified some gaps in adherence counselling.

The researcher further asked the PNs and CHWs if they have some documents to guide them in the management of ART clients, and the response was that there are free guidelines,

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policies and SOPs in the facility, but there are not enough copies for all staff or consulting rooms. These brochures available in the facilities include ethical, privacy and confidentiality policies. Community Health Workers mentioned that they do not have individualised guidelines or SOPs, but they are available in their organisation for training and reference.

Most ART clients interviewed agreed that they receive free comprehensive services including ARVs and despite their challenges that it is accessible, available and sometimes flexible. Some mentioned that they sometimes receive two months' supply when requested, while others said that they sometimes request an extension for the return dates. One professional nurse (C7) during the interview mentioned that she communicated with the clients to confirm that the date is suitable and provides another date if it is not possible. The CHWs reported that they sometimes collect treatment for clients who cannot reach the facility at that time, possibly due to work-related issues.

All facilities visited have functional TIER.Net systems. Most PNs reported that they get the list for ART clients a day before they are due for the next visit so that they can retrieve their files. Professional nurses also admitted that they know that the booking system and booking register is available to the facility. However, the challenge is the implementation of the booking strategy.

Lastly, some PNs reported that they sometimes have meetings with various stakeholders in their community to address health-related challenges. One professional nurse (PN12) reported that community involvements are the best approach to addressing the missing of appointments because families become educated during the community imbizos. Through community engagement, members of the community can understand the role of the CHWs in the community (added by FGD E4).

4.7 SYNTHESIS OF THE FINDINGS IN RESPECT OF THE STUDY GROUPS

The three groups of participants were interviewed individually in separate places with different semi-structured interview schedules (see annexures O, P, Q). Although the interview guides were different, they shared the same objectives pertaining to the central theme, namely the identification of factors (such as experiences, observations and challenges) that contribute to adult ART clients missing of appointments. The study identified two main themes which were the perceived contributory factors by clients, PNs and CHWs resulting in missed appointments among adult ART clients and the observed strategies for reducing these suggested by

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participants. Some of the factors that emerged from the data analysis mainly covered social, behavioural, economic, psychological and environmental aspects.

Social and behavioural factors influence individuals' or groups' health status. In this study, all three groups of participants identified the following social factors as impacting directly on adult ART clients' adherence to their appointments: family support, abuse of alcohol and substances and cultural/religious beliefs.

All groups noted that the issue of family support was the primary factor that impacted most negatively on adult ART clients' adherence to their appointments. The ART clients indicated that most of their families did not support them and tended to blame them. Community Health Workers also noted similar observations during support visits, and they also mentioned that some children and/or partners abandoned some ART clients. More ART clients received care from their grandmother rather than their parents, children or partners. Some ART clients also revealed that they did not have treatment supporters at home or persons to accompany them to the clinics. Professional nurses mentioned that family support has a vital role because the caregivers need education during the adherence counselling and that ART clients who experienced adherence challenges often faced family disorganisation and/or family rejection.

One professional nurse (PN6) mentioned:

There is a patient who seriously needs the caregiver, but there is no one in the family willing to take care of that patient. They used to take care of that patient while she was receiving social grants for TB, but now no one supervises the client because the grant is being terminated.

Similar challenges were mentioned by an adult ART client (C15) where he stated:

My family were taking care of me the time I was having money, now that I am broke, I sometimes even sleep without food. No one is even prepared to give me money for the bus to go to the clinic.

Another factor emerging during the data analysis was the issue of alcohol and substance abuse. Clients and PNs during the interview never reported that alcohol and substance abuse were factors contributing to the missing of appointments; however, it was identified by CHWs during their support visits in the community. Community Health Workers said that they sometimes find their clients under the influence of alcohol during support visits. They further added that some clients admitted using other substances and as a result most of these ART clients forget their appointments as well as adherence to taking their medication.

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Gurung et al. (2017) and Frost et al. (2019) indicate that substance and alcohol use among HIV-positive persons exacerbates health problems and has a combined impact on health. Both CHWs and PNs state that they observed that most clients with difficulties in adhering to appointments are those who have problems with alcohol or substance abuse. Alcohol and substance abuse do not only affect the health outcome but can cause the individual to engage in risky behaviours adding to the infection in the body; for instance, engaging in unprotected sex. Some individuals developed other chronic conditions including mental health, liver and renal conditions.

Cultural and religious beliefs were factors identified by CHWs as influencing adults' missing of ART appointments. Community Health Workers knew that some of their clients used medicines from traditional healers and faith-based prophets (such as holy water for cleansing their bodies). Other participants (CHWs) noted that their clients admitted to taking mixtures from traditional healers while on ART as their clients mentioned that they sometimes use alternatives medications related to their culture so that it would assist boosting their immunity.

There is extensive research into the issue of disclosure of HIV-positive status and strategies to facilitate this developed country-wide in South Africa. The results of these interviews conducted with all participants identified the lack of disclosure as contributing to adults' poor adherence to ART appointments. Some clients admitted that they did not tell their families or partners about their HIV-positive status, citing reasons such fear of rejection or losing financial support, feeling ashamed, suffering from self-blame and fear of losing their jobs.

The CHWs concurred with the ART clients as they observed such challenges while doing home visits. Most of the ART clients' family members did not know about the HIV-positive status of their family members. Professional nurses interviewed during the current study also mentioned that some ART clients said they had disclosed the HIV-positive status, but in reality, their families had been told about false health-related issues such as family planning. Professional nurses also mentioned that some of the clients leave the facility before being attended to because they meet someone in the queue that they know. Professional nurses also said that those ART clients who had disclosed their status to their families and employers encountered fewer challenges than non-disclosers.

Environmental factors regarded as barriers impacting negatively on adults' adherence to ART appointments, were identified by all three groups of participants in the current study as long distances to travel to ART facilities, long waiting times and queues at clinics and working (employment) considerations. All three groups (ART clients, PNs and CHWs) reported that

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those that who lived far away from the clinics were more likely to default on their ART appointments than those who lived nearby. The PNs interviewed reported that a lack of family support, having to travel long distances, waiting for many hours at clinics and financial constraints were the most significant barriers impacting negatively on clients' adherence to their ART appointments. Similar reasons were cited by the ART clients interviewed during the study who indicated that there was a lack of transport where they lived. Some of these ART clients were not working; some had their social grants suspended because of their improved health status whereas others depended on their families for financial support. Community Health Workers observed little information about the distance, but during the interview one CHWs mentioned that one of the ART clients has money to buy alcohol but none for transport. This impression suggests that some ART clients live far from the clinic.

Long waiting hours and queues contributed to poor ART clinic attendance. Both CHWs and PNs participating mentioned that some ART clients left the clinics before completing their appointments. Some ART clients interviewed during the current study said that they could not wait many hours at clinics as they got hungry. The interviewed PNs indicated that the long queues and waiting hours at clinics were due to staff shortages and high workloads.

Other PNs stated that the long queues were attributable to the clients' failure to adhere to booking schedules (appointment dates and times) as many arrived at the clinics early in the mornings believing that they would leave early. The CHWs mentioned that clients changed their scheduled dates deliberately because they do not want to be seen by their relatives or neighbours as they did not disclose their HIV status.

The NDoH (2015) developed an adherence guideline that aimed to reduce the large numbers of clients at health facilities. This guideline includes the strategy of a 'Fastlane', where clients only collect 2–3 months' supplies of pre-packaged medications without being seen by the clinic staff. Another strategy involves 'adherence clubs' where clients gather as groups and receive treatment for two months.

Many factors were assessed to identify the reasons contributing to the missing of appointments by ART clients. Among other factors, economic barriers were noted as a contributing factor affecting adherence to an appointment. Most clients stated that they have no financial means and it is difficult for them to support themselves. Similar experiences were noted by CHWs in that some clients were aware of their appointments, but only went to the clinic when they had the financial means. Professional nurses mentioned that most clients do not mention the issue of financial constraints as a factor resulting in a no show, but the issue

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was detected during adherence sessions where some admitted missing the appointment because of having no money for travelling and buying food. Similar challenges were observed during the study by Atukunda, Musiimenta, Musinguzi, Wyatt, Ashaba, Ware and Haberer, (2017) where one participant mentioned he misses appointments because he has no money and that his boss takes so long to pay him his wages.

Health service-related factors were identified as another barrier including clients' referrals, the booking system and client's engagement. The study revealed that there is a challenge when receiving client referrals either from the clinic to the community or vice versa. It was also revealed during the interview with the CHWs that ART clients were referred to CHWs by clinic nurses who met them during home visits. These referrals only occurred when the ART clients have already missed the appointments and the clinic nurses want CHWs to trace the clients. The ART clients and PNs did not say much about referrals, but the conclusion from their interviews was that there is poor client-provider communication. Professional nurses indicated that they spend a lot of time discussing adherence to medication. This was seconded by ART clients who said that in most cases they only received information about the medication, side effects, condom use and the time to take their medication.

Section 4.3.2.3 of this chapter discusses the booking system and some facilities practice it while others do not practice it at all. Community Health Workers said that it is challenging to follow up on clients return dates in the community because they do not receive a booking. To remind the clients they rely on the clients retaining the card, which is sometimes not available. Ahmadi-Javid et al. (2017) assert that outpatient appointment scheduling problems recently gained increased attention.

Furthermore, they add that these appointment systems are important components for efficient care delivery in outpatient clinics. From the findings of this study, it shows that there is a need to further explore the understanding of the booking system in the PHC facilities. According to Goffman et al. (2017), missed appointments create major dilemmas for health care systems and have a negative impact on patient care by causing scheduling and operational difficulties for clinics. It also results in diminished productivity, reduced access to adequate health care for patients and disrupted effective disease management (Goffman et al., 2017).

The clients' engagement/involvement/participation in planning their care is another factor contributing to missing of appointments. Both the ART clients, PNs and CHWs agreed that clients are poorly involved in planning their care (see Chapter 4). Kvæla et al. (2017) explain patients' participation as the right and opportunity of the patients to influence and be engaged

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in decision-making about his/her care. This is supported by Fowler et al. (2011) who agree that one of the most common sources of patient dissatisfaction is the feeling of being incorrectly informed about (and involved in) their treatment.

4.8 SUMMARY

This chapter presented the findings from all groups of participants, specifically the ART clients, PNs and CHWs. It explored various factors contributing to the missing of appointment during the individual interviews conducted with ART clients, PNs and FGDs conducted with CHWs. Two main themes, a variety of additional themes and subthemes were developed in each group. All three groups shared similar experiences in relation to the factors contributing to the missing of ART appointments. The most important factors included a lack of family support, financial issues, distance from health care facilities, health care services and clients' involvement. Some participants in this study suggested some strategies. The findings from the three groups of participants will be used in Chapter 5 to develop an approach that could help to reduce the number of missed ART appointments. Chapter 5 explains the conceptualisation of a theoretical framework for this study.

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CHAPTER 5

CONTEXTUALISING OF THE STUDY'S FINDINGS AND DEVELOPMENT OF THE STRATEGY

5.1 INTRODUCTION

Chapter 4 presented the findings and discussion of the perceived strategies from adult ART clients, PNs and CHWs participating in the study during the semi-structured individual interviews and FGDs. This chapter aims to develop an approach to reduce the number of missed ART appointments and enable the health facility to understand why some adult ART clients miss their appointments and determine the future direction. The main aim is to provide health facilities with directions to achieve the set goal of reducing the number of missed ART appointments. Firstly, this chapter presents the contextualisation of the findings applying the IMB skills model, followed by a SWOT analysis to evaluate the data from the participants and later develop the approach.

5.2 CONTEXTUALISING OF THE CURRENT STUDY'S FINDINGS INTO A CONCEPTUAL FRAMEWORK

The IMB Skills Model of Adherence to ART was adopted as a conceptual framework for the study and explained as the theoretical foundation to assist the researcher in exploring the behavioural determinants of missing of appointments among adults on ART. Exploration of the behavioural determinants was in the form of investigation and finding out the determinant and risk factors, health service-related issues and the association of socio-environmental and other client-provider related factors contributing to the missing of appointments among clients on ART in the Limpopo Province.

According to the NDoH (2016), the challenges of non-adherence is multifaceted with clients facing barriers to adherence as a result of both supply and demand factors. The factors that contribute to non-adherence are complex and vary between individuals and across the population. The NDoH (2016) reports that there is a low rate of adherence among adults on ART and the result of non-adherence adds to morbidity and mortality among chronic clients

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and increases health costs. Fisher et al. (2006) mention that HIV-positive persons who do not maintain consistently high levels of adherence experience therapeutic failure frequently and deterioration of their health status and may develop multidrug-resistant HIV that can transmit to uninfected persons. An IMB model of adherence for HAART provided a conceptual framework in this study because it can be used to understand, predict and promote adherence to appointments.

The IMB model was developed to promote adherence to ART, in which adherence to 'antiretroviral therapy' does not merely mean the taking of medication but also involves the issue of follow-ups. This model focuses comprehensively on the information, motivation and behavioural skills factors conceptually and empirically linked to adherence and specifies situational and personal factors (Fisher et al., 2006).

Information according to the IMB model of adherence is relevant to HAART and a prerequisite for consistent and correct use of therapy as it is accurate and may facilitate adherence. Alternatively, information may be inaccurate and may constitute an impediment to HAART adherence, as in the case of an individual who is misinformed or lacks information. The current study reveals that there is a massive gap in information among HIV+ patients as evidenced by the lack of client engagement during initiations and follow-ups. Also, not all information is given to clients during the adherence session as sometimes it only involves the consequences of missing the doses, using condoms and reducing multiple partners rather than the effect of missing the appointment. Worried clients mentioned that the only information communicated to them is what is HIV and that the treatment for their lifetimes as there is no cure for HIV at present.

The issue of treatment therapy, reasons for the current regimen, blood results and clinical outcomes were not mentioned in most cases during the sessions. The ART clients also said that they do not know why the other medications should not be taken concurrently with ARVs, whereas one participant stated that he only knows that alcohol is morally wrong, but he does not know why. Fisher et al. (2006) said that providing specific information relevant to adherence is vital, as individuals may possess adherence-related approaches permitting relatively automatic and cognitively effortless adherence-related decision-making only to find that these are often incorrect (e.g., I am ok even when I miss the medications, so there is no need for regular check-ups) and that this negatively affects ART adherence.

Some PNs participating in the study agreed with the clients and said that they do not spend enough time with the clients either during ART initiation or during follow-ups due to the long

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queues. Others mention that they are not knowledgeable in the management of ART clients as the NIM-ART training is short and focuses mainly on drugs and side effects. Some PNs mentioned that they have no training in adherence counselling and advanced clinical care management of ART clients. Hence, they end capitalising on the issue of explaining HIV and the mode of transmission. As a result, there are gaps in the clients' knowledge about many of the facts relating to HIV/ART, and this is a major concern.

Community Health Workers also revealed that it is very difficult for them to teach the clients in the community about the holistic approach to HIV management because they have no training in most aspects of HIV management. They face the challenges of answering some of the questions posed by clients during support visits. Most clients are familiar with the myths about HIV and CHWs find it challenging to clarify these views due to inadequate information. The current study also revealed that other clients stop taking medication due to the side effects. The CHWs explained that they know little about HIV drug side effects and it is complicated to convince the clients that the side effects may be due to other things like the use of alternative medication or it is a side effect of the drugs that must be tolerated.

This lack of information was equally apparent in clients, PNS and CHWs and reflected the fact that patients are not well-informed about the importance of adhering to a treatment plan as a whole. Insufficient knowledge is a feature observed in this study that contributes to the missing of appointments from all viewpoints. Most ART clients do not take missing appointments seriously because they are not aware of the health or economic impact of their actions. Missing appointments is a means of measuring adherence to ARVs and conclusions may be that a person with poor adherence to appointments also has challenges in adhering to treatment. These individuals are most likely to develop drug failure or resistance, resulting in the switch from a low-cost regimen to the more expensive regimen and increasing the pill burden that will worsen the ART tolerances.

Frustrated PNs also find difficult to assess which clients are vulnerable to missing appointments due to incompetence, lack of time and no guiding checklist or algorithms for them to follow concerning what should be covered during follow-ups and ART initiations. It is worse in the case of CHWs as they end up repeating themselves to the clients in the community about the risks of defaulting ARVs and failing to address the factors that cause poor adherence to appointments, for example, helping the client to disclose their HIV status. However, CHWs and PNs confirmed that clients who are highly informed tend to miss appointments less frequently than those who are less informed. In conclusion, clients' involvement in their care has a vital role in reducing the shortage of knowledge as they can

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ask essential questions to seek clarity on their concerns that may affect their adherence to appointment and also enhance client-nurse relationships.

According to the IMB model, a lack of knowledge results in clients on ART having little motivation and so the next fundamental determinant of adherence to ART is motivation. The IMB model of adherence views an individual's motivation to adhere to HAART as being based on his or her personal and social incentive to adhere to therapy. Personal motivation includes an HIV-positive individual's attitudes toward following his or her regimen and is based on his or her beliefs about the outcomes of HAART adherence (or nonadherence) and evaluations of these outcomes

According to Deci and Ryan (2015), a self-determination framework is needed to be positively in control of one's care and described as a macro-theory of human motivation, personality development and well-being. The theory relates to human motivation, personality and optimal functioning not only focusing on the amount of motivation but also on the different types (Deci & Ryan, 2015). This theory also emphasises the processes through which a person acquires the motivation for initiating new health-related behaviour and maintaining it over a long time. In terms of ART, the self-determination framework holds that HIV-positive people who are well-informed, motivated to act and possess the behavioural skills that enable them to act effectively, will adhere to ART treatment programme (Amico, Toro-Alfonso & Fisher, 2005).

During the study, the issue of social support emerged as a factor that influences missing of appointments among ART clients. Most clients reported that they tend to become demotivated because they lack social support either from family or even the health care providers. Social motivation to adhere rests on the individual's perceptions of social support from significant others for following his or her regimen and the individual's motivation to comply with these referent others (Fisher et al., 2006). 'Perceived social support for HAART adherence and motivation to comply with referent others are also assumed to be associated with greater adherence to therapy' (Fisher et al., 2006).

Observations of family disorganisations as a result of HIV conditions emerged during this study. Most clients stated that they lack family support to the extent that a partner may move out from home. Others indicated that their family only accompanied them once during ART initiation; after that, they had to go alone as they have disgraced them. Some clients rely on families for financial support, but they meet challenges at some point.

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Deci and Ryan (2015) assert that many studies have exposed that across these domains in many countries, outcomes are most favourable when the social environment is supportive of basic needs and targeted individuals are autonomously motivated. However, this is not the same for all the clients who miss appointments because of the lack of social support. Other clients miss appointments due to reasons such as a feeling of worthlessness, resulting in demotivation. In the theory of self-determination by Deci and Ryan (2015), it states that autonomic motivation has a significant role in adherence because a person will freely participate in his or her treatment care without fear of punishment or prejudice.

Family support affects the motivation of the client and even a welcoming environment from the health care providers at the clinic is important. Clients wish to be fully involved by the health care provider throughout the treatment sessions and feel that they listen and will assist them with their concerns and treat them with respect and dignity without being labelled. This positive engagement could motivate them to return for their next clinic visit. Clients become less motivated to manage their health when they feel discouraged and do not find any reason to continue taking ARVs as they feel hopeless and blame themselves (Kasumu & Balogun, 2014). This may be a significant barrier to adhering to appointments.

The client relationship is a critical medium and vehicle for change. In the Health Care Centre settings, vulnerable individuals often lack technical expertise and require the input and guidance from professionals (Deci & Ryan, 2015). Several interventions have proved useful in promoting clients' involvement in treatment decisions as educating clients plays an active role in self-management of chronic conditions (Coulter et al., 2008). Furthermore, clients who are fully informed of their condition tend to be more determined and adhere to their treatment plan.

Even if clients have the information and are well-motivated, it does not necessarily mean that they have developed the relevant behavioural skills needed to overcome their barriers alone. They still need to modify specific behavioural skills in the management of their health. Behavioural skills in adhering to HAART are an additional critical prerequisite of adherence and determine whether even well-informed and motivated individuals will be capable of adhering to HAART (Fisher et al., 2006). The behavioural skills component of the IMB model of adherence consists of an individual's real abilities as well as their perceived self-efficacy concerning the complex sequence of behaviour involved in adhering to HAART (Fisher et al., 2006).

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Some of the clients in this study engage in individual behaviours that affect their adherence to appointments. Behaviours include the use of alternative or traditional medications and for others the use of alcohol and substances resulting in their missing ARVs doses. Fisher et al. (2006) state that the behavioural skills involved in HAART adherence can include objective and perceived abilities to acquire, keep accessible, self-cue and self-administer combinations of HAART medications according to a prescribed schedule and as directed. Some clients reported taking the doses incorrectly, sometimes once instead of twice a day.

Behavioural skills according to IMB model by Fisher et al. (2006) need to incorporate adherence to complex therapy regimens into daily life; identify and cope with HAART side effects; obtain and update adherence-related facts; mobilise social support; communicate effectively with health care providers about HAART; and reinforce the reason for maintaining treatment over time and meet the challenges. It was observed that clients and providers have poor relationships that result in a lack of involvement and engagement. Almost all clients admitted that they were uninformed about the management of side effects but were told that they might experience them. Due to poor clients-provider relationships, effective communication is difficult. Professional nurses admitted that they only concentrate on issuing the medication in an attempt to reduce the long queues outside. Community Health Workers said that it is very challenging to organise family support because most did not disclose their status, and some families themselves are the ones pursuing cultural, traditional and religious customs.

Fisher et al. (2006) say that the IMB model of adherence specifies that adherence information and motivation work primarily through adherence behavioural skills to influence these activities. In essence, the effects of adherence information and motivation become apparent through the application of related behavioural skills such as following the proper doses and adhering to the prescribed appointments. The IMB model also specifies that adherence information and motivation may have direct effects on related behaviour in cases in which are complicated or novel behavioural skills are not necessary to affect adherence.

The effect of information and motivation on adherence behaviour seems generally mediated by adherence-related behavioural skills. The IMB model of adherence to HAART also asserts that adherence to therapy directly links with individual health outcomes. In this study, the health outcome predicted is physical health, sustained virologic suppression and improved immunological response, low chances of developing an opportunistic infection which increases disease progression and improving the quality of life. Fisher et al. (2006) mention that ‘a positive physical health and subjective health outcome may strengthen an individual’s

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confidence in his or her information about adherence, strengthen their personal and social motivation to adhere to therapy, and reinforce objective behavioural skills and perceived self-efficacy for adherence to HAART'. Health care centre providers and clients should work together as active partners to clarify acceptable and appropriate treatment plans (Fowler et al., 2011). When clients become more involved, their knowledge improves, and also, their anxiety lessens, and they feel more satisfied. These prompts improving knowledge and recall and helps clients to be more involved and in control of their care (Fowler et al., 2011). As a result, the client is motivated to take control of their care without being pushed by an external force.

According to the model, positive feedback should result in increased and maintained adherence over time. Alternatively, a poor medical and/or subjective health outcome may cause an individual to have reduced confidence in his or her adherence-related information, reduced motivation to adhere to therapy, and decreased perceived and objective behavioural skills for adherence. In many circumstances, situational and individual characteristics identified in the literature are moderating variables in the IMB model of adherence. These include the individual's degree of psychological health, stable living situation, ease of access to medication and medical services, and chemical dependency status, among others, to make adherence to ART possible.

The study portrays that regardless of information and motivation, clients who fail to adhere to appointments often have family challenges and unstable living environments resulting in psychological problems. Some are affected by travel problems and distance resulting in a lack of accessibility to treatment on time. Such variables are the extreme cases where the clients develop profound psychological ill health, some become homeless and others cannot access health care. It was also noted during data collection that these clients need to travel more kilometre to clinics. These type of variables make adherence difficult regardless of an individual's level of information, motivation and behavioural skills.

The IMB model's information, motivation and behavioural skills constructs are regarded as highly generalisable determinants of adherence to HAART across populations and adherence behaviour of interest (Fisher et al., 2006). Information, motivation and behavioural skills elements are implicated in non-adherence and the requirements to ensure adequate adherence may differ in different cultures. In some, for example, discrimination and stigma may affect HIV-positive individuals' levels of adherence-related information, motivation and behavioural skills, as well as other moderating factors, and can present special challenges. From the perspective of the IMB model, identifying the information, motivation and behavioural

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skills content and constructs strongly influences appropriate behaviour in a specific population and is crucial to understanding and modifying HAART adherence.

5.3 SWOT ANALYSIS AND INFORMATION MOTIVATION BEHAVIOURAL MODEL

The SWOT analysis has two internal and external factors that need consideration when developing a strategy to reduce the number of adult clients' ART missed appointments, affecting the comprehensive care and management of ART services. The theoretical framework was incorporated when explaining these factors. The findings obtained from the adult ART clients, PNs and CHWs will guide the discussion.

According to Phadermroda, Crowder and Wills (2019), SWOT analysis is a standard tool used for strategic planning and traditionally a form for the brainstorming of ideas. It is the method commonly used for analysing the position of the organisation's resources and the environment in four fields, namely strengths, weaknesses, opportunities and threats. Phadermroda et al. (2019) indicate that strengths and weaknesses are internal factors that are controllable and achievable. However, opportunities and threats are external factors that are uncontrollable and can enable and disable organisations in accomplishing their missions. These four fields assist the organisation in identifying the factors and recognising its core competencies for decision-making, planning and building strategies (Phadermroda et al., 2019). Consequently, this approach is used in the current study to develop a SWOT analysis matrix.

To analyse the internal factors of strengths and weaknesses the study used four aspects; these are human resources, competencies, financial cost and services. Political, Economic, Social, Technological, Environmental and Legal (PESTEL) analysis examined the external factors of opportunities and threats within the SWOT model. The PESTEL approach assists in developing a broader understanding of the bigger picture including the socio-cultural aspects and environment where there are ART programmes in place to build a vision for the future. The steps to develop the SWOT matrix are illustrated in Chapter 3 and the schematic processes to develop the strategy in Figure 5.1.

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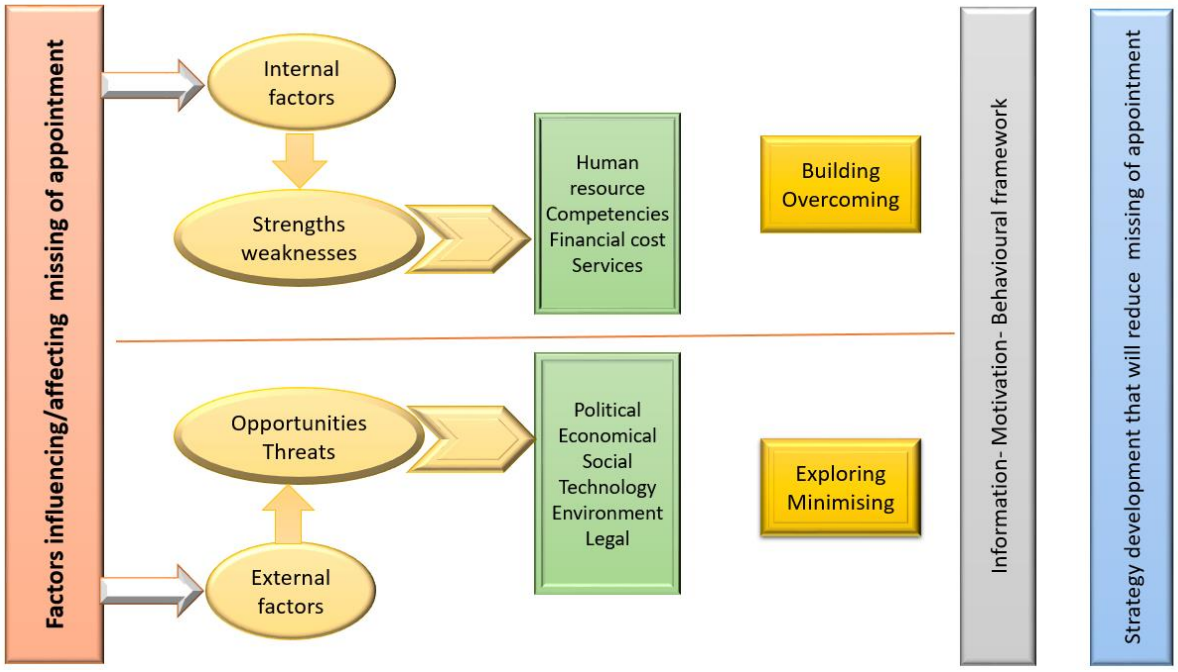

Figure 5.1 Proposed schematic processes for developing a strategy through the SWOT matrix

5.3.1 Internal factors of strengths and weaknesses

This section discusses the strengths and weakness as factors in the SWOT matrix in relation to the results of the study. These factors include human resources, competencies, financial costs and services that are controllable and can facilitate the achievement of the organisation's goals. The strengths and weakness of these factors will be presented simultaneously under each sub-heading. Figure 5.2 illustrates the factors in strengths and weaknesses.

Figure 5.2 Proposed schematic illustration for factors of strengths and weaknesses of SWOT matrix

5.3.1.1 Human resources

Human resources involve both the employees of a company, organisation or department and those responsible for managing the resources related to employees. In this study, human resources include PNs and CHWs.

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A strength in this area is those PNs trained in NIM-ART. Although the CHWs belong to the NGOs, they are dispersed to various health facilities to assist in the management of ART clients and other clients in the community.

A weakness in human resources is that some of the CHCs that participated in the study have limited numbers of NIM-ART trained PNs and most had large numbers of ART clients, and an unbalanced ratio of CHWs to the number of ART clients. These findings imply that some ART clients do not have supervision and/or support.

Human resources play a significant role in providing information to ART clients and their family members. The PNs are the first to come in contact with HIV-positive clients after diagnosis to initiate them into ARVs therapy. The information for these clients should be relevant and enable him/her to understand the condition and benefits of adhering to ART. The information a NIM-ART trained nurse provides to a client should assist him/her in making relevant ART-related decisions. The IMB theory implies that information is the key for adherence to ART and that a well-informed client becomes motivated to adhere to ART.

Information and motivation facilitate behavioural changes where a person takes the initiative in adopting the new skills that promote positive outcomes. Clients will receive information about effective ART adherence, including the importance of attending ART appointments, choice of regimen, side effects of ARVs and drug-to-drug interaction. Also, the client, as well as the family members receive information. Family members can accompany the client for treatment or to the CHWs who provide information during support visits. Therefore, the motivation for updating workshops and in-service training should be provided to HCWs.

The weakness of human resources can be overcome by motivating training for NIM-ART for PNs and in-service training for HCWs. Professional nurses should mentor HCWs to ensure that information provided to the ART clients is relevant. The current study's findings also revealed inadequate follow-up of ART clients in the community. This weakness can be improved by increasing the number of CHWs according to the environmental needs. Table 5.1 Illustrates the application of IMB Theory to human resources.

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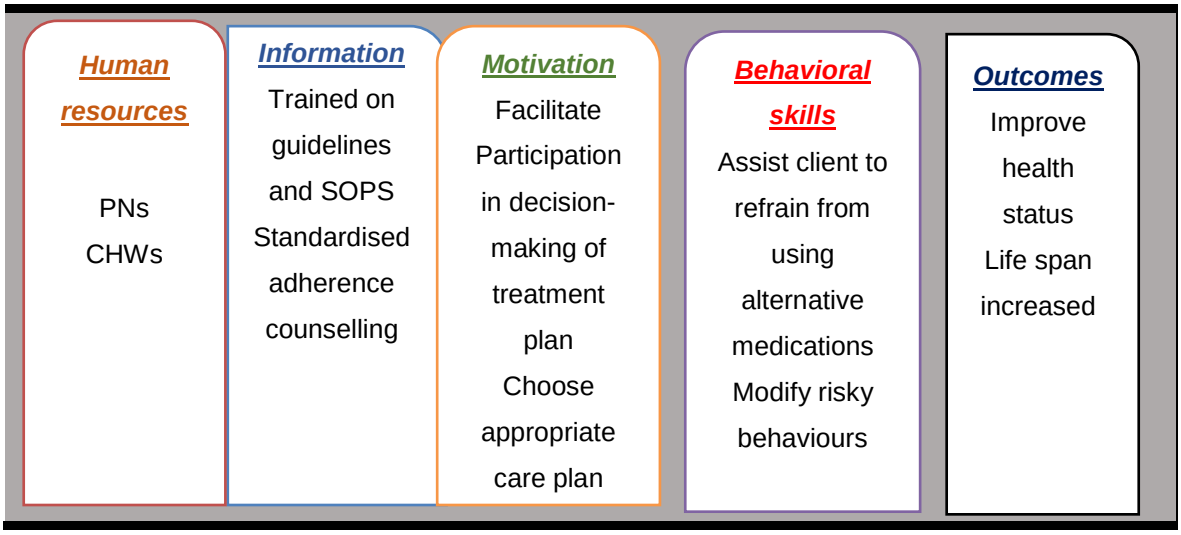
Table 5.1 Summary of application of IMB Theory to human resources



5.3.1.2 Competencies

The Business Dictionary describes competency as the commitments, knowledge and skills that enable an individual to perform effectively in particular situations. Health care providers need to be proficient in ART management, as well as the clients and their families who need to have competence, skills and knowledge. According to IMB Theory, a person needs to be educated to be competent as information is the key to develop the skills and knowledge required to capacitate the clients in behavioural modifications. Clients who encounter challenges and miss ART appointments need to be provided with information that will improve their ART adherence behavioural skills.

The strengths related to competency include PNs and CHWs having knowledge about the Standard Operational Procedures (SOPs) for the management of ART clients. The SOPs include information on how to manage the clients at the facility and in the community and are available in all the facilities for reference. Another strength is that all ART clients receive adherence counselling prior to ART initiation, which is an ongoing process that also happens during treatment collections or any appointment or visit.

Some CHWs were able to refer clients who had defaulted treatment and those who had developed side effects or opportunistic infections to the CHCs for further management. The CHWs received these skills and knowledge during in-service training or clinic meetings.

Supervision and mentoring of the implementation of SOPs should be applied regularly by the facility manager. This can be achieved by auditing ART clinical records to identify whether

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competencies are maintained managing ART clients. Any incomplete clinical ART records pose questions about competency. The operational manager will identify aspects to address during in-service training provided by an expert person. Sustained mentoring and supervision of CHWs will enhance competency because they will be required to give feedback about the clients under their supervision.

Adherence counselling aims to improve the competency of ART clients in the management of their care. Family members should accompany ART clients to the CHCs, especially during the early stages of ART. During adherence sessions, family members should also be informed so that they become competent in managing ART clients at home. Family members of ART clients who have challenges in attending ART appointments should be invited to the clinic so that they can understand how to deal with such a person at home.

The competency-related weaknesses identified in the current study include the fact that NIM-ART training does not cover some aspects required to be competent in managing ART clients. The training focuses mostly on ARV regimens, side effects and opportunistic infections. The current study's findings revealed that clients missed ART appointments due to reasons such as the attitudes of health professionals, the use of alternative medications, psychological challenges and socioeconomic issues. However, NIM-ART does not cover the management of these aspects that affect clients' adherence to their ART appointments.

The IMB Theory implies that for the person to be competent, information and knowledge are required as well as the skills to manage particular challenges. Professional nurses might not be competent to deal with an adult ART client abusing alcohol and/or substances or a mentally ill patient. These challenges require particular skills to deal with these situations and influence their clients' adherence to their ART appointments.

Another weakness identified (see Section 4.3.1.1) is that PNs lack competency about client-provider involvements. The service provider was mostly provider-centred without engaging with clients during the sessions of ART. Section 4.2.3.3 indicates that clients were typically not given a chance to participate fully and health care providers did most of the talking and gave them with return dates without exploring the client's' ability to attend the ART appointments on those dates.

A probing question asked PNs about provider-client relationship training, and some admitted that they never received any training about provider-client relationships (see Section 4.3.1.1).

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Effective provider-client relationships require skills and competency. Professional nurses and CHWs require these and even the clients could benefit from such skills.

Effective provider-client relationships improve communications between the two parties and facilitates the process of transferring knowledge through communication. Clients who have good relationships can communicate their challenges to their health care providers. One client interviewed during the current study (see Section 4.2.3.3) indicated that he was scared to tell the nurses that the date for his next appointment did not suit his off-duty roster because the CHC nurses were not friendly and did not listen to clients' requests or opinions. Some CHWs reported that clients in the community did not disclose their HIV-positive status, as some community members chased them away preventing the CHWs from supporting those particular ART clients (see Section 4.4.1.2). During adherence counselling, the clients need to be taken through the process of the provider-client relationship so that they can feel free to communicate their challenges and also to participate in the decision-making concerning their treatment plan including the choice of return dates.

Families serve as a support system in the community for ART clients, and to remind them about adherence to treatment plans, including follow-up ART appointments. Hence, the relationship between an ART client and his/her family members needs consideration. Families need to be involved during adherence counselling to develop skills to manage their family members at home. Training should extend to all personnel involved in the care of ART clients. The outcome of proper support is motivation. All groups will be motivated to participate in the management of ART clients, encouraging the client to adhere to the treatment plan. Table 5.2 illustrates the application of the IMB Theory to competence.

Table 5.2 Summary of application the IMB Theory to competence

Competency	***Information***	***Motivation***	***Behavioral skills***	***Outcome***
Knowledge of SOPs and guidelines Adherence counselling skills	Teaching about HIV/AIDS and ART holistically	Participate in decision-making of treatment plan Performance appraisal	Keeping appointment dates Acquiring social support Effective communication	Improve health status 95 % adherence to appointments and ARVs

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5.3.1.3 Finances

Every organisation requires finance for the smooth operation of its services. Financial costs imply the availability of funds and other material resources that enable the organisation to function at an acceptable standard without service interruptions. Resources such as the availability of drugs, laboratory services and freely available guidelines should always be sustained and always available.

Professional nurses during the interviews mentioned that the facilities had no shortage of ARVs and encountered no challenges ordering and receiving ARVs (see Section 4.6). The availability of medication motivates clients to return for treatment refills. Each facility's stock level of ARVs should be up to date so that ART services are always accessible and never disrupted because of unavailable medication. The announcement concerning the provision of ARVs regardless of CD4 cell count (as explained in Chapter 1) has increased the number of ART clients. Consistently available ARVs are essential for effective ART services.

Another strength is that guidelines were available at each facility (see Section 4.3.2.1). The manager at the district level supplied guidelines coupled with in-service training about those recommendations. Proper implementation of guidelines reduces costs and lawsuits. The PNs could initiate clients on appropriate ART regimens suiting each client's clinical characteristics and baseline blood results. These guidelines also directed the PNs to explain the choice of ARVs to the clients to improve clients' knowledge and understanding, enhancing clients' adherence to treatment, including follow-up appointments.

The availability of guidelines in the facility can also assist the CHWs to refer clients appropriately and manage ART clients in the community. This can be accomplished by involving the CHWs during on-site in-service training provided at the CHCs.

Although there are guidelines for the management of ART clients, the challenge was that there were not enough available for the number of staff members (see Section 4.3.2.1). In most cases, only one set of guidelines is provided to a facility and stored in the operational manager's office to which the PNs had no access. Professional nurses reported that there were no guidelines in the consulting rooms, implying that they had to waste time finding them. The guidelines are standardised tools directing the process of managing ART clients and the non-availability of guidelines contributed to the poor management of ART clients, especially in cases where professionals were unwilling to look for these outside of their consulting rooms.

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Another weakness discovered during the current study was that sometimes there are shortages of ART forms at the clinical stations such as the clients retained cards (appointment cards) and summary visit forms that record the clients' information (refer to Section 4.3.2.1). In the study, clients complained about forgetfulness and having no access to reminders (see Section 4.4.3.1). Clients retained their ART clinic cards as reminders. Clients' family members and CHWs could use these cards to assist the clients to remember their appointment dates. Hence, they face challenges when the clients' retained card is not available, or the date is not documented (see Section 4.4.1.2). Missed appointments affect financial costs because many of the purchased medications are not utilised in time and some expired while in the clinic.

Summaries of clients' visits, documenting and resolving clients' complaints and concerns could enhance ART clients' adherence and information in the summary sheet should include the return dates. If these return dates are not noted, the TIER.Net system will generate large numbers of clients' missed appointments. As a result, the department may budget more money for tracing defaulters, which is ineffective. Table 5.3 summarises the application of the IMB Theory to the financial cost factor.

Table 5.3 Summary of application the IMB Theory to the financial cost factor

Financial cost	***Information***	***Motivation***	***Behavioral skills***	***Outcome***
Availability of guidelines Drug availability Availability of ART-related stationery	Serve as a source of references Communicate return dates	Feel competent to manage ART clients in the community or on site at the facility	Adhering to the correct treatment regimen Updating on ART- related factors	Improved health Promote staying in care Reminders for ART appointments

5.3.1.4 Services

Services are any form of activities provided by any organisation in a community, or in any place, aiming to achieve set goals. Service delivery systems are responsible for providing health services for patients, persons, families, communities and populations in general, and not only care for patients. Health service delivery systems that are safe, accessible, high quality, people-centred and integrated are critical for universal health coverage.

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Another strength of the ART programme in the Limpopo Province is that the service is free, available, accessible, affordable and flexible. Unlike the private sector and the hospitals, services offered at PHC clinics are all free of charge. The PNs participating in the study mentioned that the clients receive free comprehensive primary health services including free ARVs at all CHCs, including the fixed clinics and public hospitals in the Limpopo Province.

Although some ART clients interviewed during the current study (see Section 4.2.2.2.) reported challenges concerning the distances they had to travel to reach CHCs, most clients were able to access the clinics because they lived within a few kilometres from the clinic.

Affordability plays a vital role because it motivates clients to adhere to their treatment. Although most ART clients interviewed during the current study (see Section 4.2.2.1), struggled financially, they did not pay for their ARVs ensuring the affordability of the service to all ART clients.

Accessibility, availability and flexibility of services motivate the clients to adhere to their treatment regimens. Clients need education about the availability of ART services at specific facilities and in the community. It was noted in the current study that some clients used alternative medications (see Section 4.4.3.4), partly attributed to a lack of knowledge. Some clients present late at facilities because they were not informed about the services provided at the facility while others believed that ARVS are only required when one is very sick (see Section 4.4.3.4). As a result, clients might fail to tolerate the side effects of ARVs and eventually stop taking medication. This lack of information could be overcome by health presentations and raising awareness in the community and clinics.

The factors such as non-functional booking systems, non-availability of reminder systems, long waiting hours at facilities and poor linkage to care are categorised as weaknesses in the SWOT analysis matrix. These factors contribute to the number of missed ART appointments, resulting in providers' and clients' dissatisfaction and treatment interruptions producing adverse treatment outcomes.

A booking system was available in almost all CHCs (see Section 4.6) as required for the implementation of ideal clinic management. However, the available booking system was not utilised effectively. The booking system requires that a client has an appointment on a day and time suitable for the client, but in most instances, ART clients' bookings are according to the service rendered on that particular day. In PHC clinics, ARVs are provided daily during the

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week. The practice reported by participants in the current study was that most clients were registered in the booking register without their knowledge (see Section 4.3.2.3). The booking register records the number of chronic clients who have attended the clinic during a specific month and has different timeslots where a client can choose the time that is suitable for him/her, but clients were frequently not involved in making these choices.

Clients need to be involved in choosing their appointments to overcome these challenges. Nurses should communicate the available days and times to the clients. Caution is necessary to avoid overbooking of clients on the same dates and times that results in overcrowding of the CHC as a non-functional booking system might be the leading cause of long waiting times at the facilities. Professional nurses reported that they are overwhelmed with the workload at the clinics (see Section 4.3.2.1). An effective booking system could solve this problem because the facility can allocate more human resources on the days with more appointment times reserved for ART clients.

Another challenge identified during the current study pertains to the lack of strategies and approaches to minimise the missing of appointments by ART clients. Some of the strategies include reminder systems as discussed in Section 4.5. It appears that most facilities do not use reminders at all because the facility sends CHWs to find a client who has already missed an appointment (see Section 4.4.1.1). Clients should be informed about the different reminder systems available in the facility so that they can choose an appropriate one. Allowing the clients to select the strategy or approach that will improve adherence to appointments can facilitate behavioural changes because these clients feel motivated and respected. Also, CHWs need to be involved and orientated in different approaches or strategies adopted by the facility so that they can support it with the ART clients in the community.

The current study's findings (see Section 4.4.1.1) also revealed a gap in ART collaboration between clinics and communities. Masquillier et al. (2016) stipulate that ART clients should have a treatment supporter who could be a supervisor in the community or family members. The issue of a treatment supporter should be emphasised during adherence counselling prior to ART initiation. The reason for a treatment supporter must be outlined clearly because some clients think that the CHWs visiting them at their home are there to disclose their HIV-positive status to the family members or community as indicated in Section 4.4.2.2 where CHWs note that community members associate them with TB and HIV. Table 5.4 illustrates the application of the IMB theory in the service factor.

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Table 5.4 Summary of the application IMB Theory to the service factor

Services	Information	Motivation	Behavioral skills	Outcome
Free accessible, available, affordable flexible Booking system Reminder system Long waiting hours Linkage from clinic to community care	Knowledge about the services offered in the facility. Dangers of late presentation How the booking system functions Have various options for choosing a reminder system	To utilize health facilities To tolerate ARVs' side-effect that are short term To honour the appointment dates To utilise the support system	Early seeking of help Improve tolerance To take control of one's own illness Acceptance of being assisted by family members and CHWs Self-reinforcement of adherence over time	Improved quality of life Not lost to follow-up Defaulter rate will decrease Adherence to appointments will increase

5.3.2 External factors: opportunities and threats

External factors in the SWOT matrix involve opportunities and threats and identify as affecting the number of adult clients' missed ART appointments. These are the last two factors in the SWOT matrix, and they involve the mnemonic of PESTEL (see Figure 5.3). Factors, regarded as opportunities, were explored in the current study to identify whether they could be strengthened to reduce the number of missed appointments. Considered threats should be minimised because these may increase the number of adult clients' missed appointments. Figure 5.3 presents the proposed schematic presentation for external factors of opportunities and threats.

Figure 5.3 Proposed schematic illustration for external factors of opportunities and threats

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5.3.2.1 Political factors

Political factors are activities related to government policy and its administrative practices. Any organisation has concerns with political aspects influencing the organisation's operation. In health care organisations, the policies and guidelines have political mandates, and every person managing the clients should abide by the relevant guidelines and policies. The decision to provide ARVs to HIV-positive persons, regardless of their CD4 counts, was later implemented (Geffen & Low, 2017; Eholié, Badje, Kouame, N'takpe, Moh, Danel & Anglaret, 2016).

During 2000, South Africa's Constitutional Court ruled that the government make ARVs, such as Nevirapine, universally available to pregnant women infected with HIV in attempt to prevent mother-to-child transmission. Arguments continued in parliament until broader access to ARVs was granted (Eholié et al., 2017).

South Africa has a policy in place regarding the management of the HIV pandemic. Chibango (2013) specifies the HIV and AIDS policy formulation trend in the first decade of attaining democracy in South Africa. Chibango (2013) emphasises that recent policy and legislation regarding HIV and AIDS has shown a great determination by the government to reverse the epidemic. The South African government's present collaboration with civil society demonstrates an understanding that the fight against HIV and AIDS is a shared responsibility while paying attention to various groups such as women, children and men in particular (Chibango 2013).

Wouters, van Rensburg and Meulemans (2010) add the following in terms of policy that in November 2003, the South African Cabinet announced the 'operational plan for comprehensive HIV and AIDS Care, Management and Treatment for South Africa', which aimed to initiate ART and Prevention of Mother-to-Child Transmission (PMTCT) nationally. The concern of the South African government is to reduce the new HIV transmission rate and improve the life expectancy of people living with HIV.

This current study considered the availability of policy to manage HIV pandemics as an opportunity to reduce the number of missed ART appointments because it is a political mandate that HIV services should be accessible and affordable for all HIV-infected South Africans. The service expanded to all CHCs including public PHC facilities in South Africa to provide ART services, so clients have no excuse for being unable to access the service.

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Amon and Todrys (2009) state that in South Africa individuals with irregular status are 'afforded a right to free health care including antiretroviral therapy (ART), non-South African citizens are frequently denied ART at public health care institutions. In contrast, the current study findings (see Section 4.3.2.2) revealed that migrants are offered ART services even though they lack legal documents such as passports. However, the human rights watch research as well as NGOs and media reports describe a noticeable gap between South Africa's inclusive policies and the reality of access to health care for refugees as argued by Amon and Todrys (2009).

The threats include the fact that South Africa has no policy controlling migrants' access to ART services because those from neighbouring countries, that is the migrants living in South Africa can access free ART services (see Section 4.3.2.2). One migrant ART client who participated in the current study reported that it was not necessary to miss ARV doses although he had missed appointments at various ART clinics. This was because he collected ARVs at five different clinics, using different names (see Sections 4.2.2.2 and 4.3.2.2). Controlling migrants' ART access is impossible without an official policy specifying that a valid South African identification document or passport is required to supply ARVs to non-South African citizens. This would assist the South African government in establishing how many people are utilising ART services, including those from other countries.

Furthermore, a centralised country-wide computer register of all ART clients should be accessible at every ART clinic. Every supply of ARVs should be entered on this register against the client's identification or passport number to prevent ART clients from collecting ARVs at different clinics.

5.3.2.2 Economic factor

During the interviews, the PNs (see Section 4.6) reported that they were aware of the budget for HIV management, although the facility does not control it as it is distributed by the district. The available budget makes it easy for the facility to order free ARVs for the ART clients and conduct other services, for example, laboratory services. The study identifies this as an opportunity because the ART services are accessible and affordable.

Unfortunately, the budget allocated to the facility for the management of HIV does not cover the social grant for ART clients reported by PNs during interviews. The current study (see Sections 4.2.2.1 and 4.2.1.2) revealed that most ART clients participating in the study struggled financially and need social grants relieved their poverty. They claimed that they missed ART appointments because of poverty-related factors. Social grants for HIV-positive

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persons present complex and challenging issues. People used to receive social grants once diagnosed as HIV-positive, but since the improved roll-out of ARVs, specific criteria must be met to qualify for a social grant (Govender et al., 2015). These criteria extended to adults with HIV/AIDS who are unable to work because of a mental or physical disability. The provision of ARVs aims to improve people's lives enabling them to live as normally as possible, including being able to work. However, this situation was perceived as unfair by ART clients, causing some to temporarily stop taking ARVs so that they could qualify for social grants (see Section 4.2.1.2).

5.3.2.3 Social factors

Social determinants of health reflect the social factors and physical conditions of the environment in which people are born, live, learn, play, work and age. These factors are also known as social and physical determinants of health and impact a wide range of health-related issues and quality-of-life outcomes. The current study did not identify specific opportunities related to social factors. However, facilities offering ART services were user-friendly and not regarded as being a contributory factor to the missing of ART appointments. Both the clients, PNs and CHWs (see Section 4.6) never complained about the physical environments offering ART services.

Information plays a significant role in modifying certain behaviours according to the IMB Theory. Exposure to stigma and discrimination in the workplace, community and even at clinics could affect adults' missing of their ART appointments. A policy should be formulated to protect ART clients.

Cultural and religious beliefs could impact negatively on behavioural changes. ART clients are influenced by cultural and religious factors, as well as their family members and health care providers (see Section 4.4.3.4). Cultural and religious beliefs could influence ART clients to use alternative medications or holy waters, affecting their adherence to ART appointments.

5.3.2.4 Technology

Consideration of technology is essential in examining any organisation and functioning of health care services and systems for many reasons. Primarily, technology is a significant component of current health care costs.

The availability of the TIER.Net system in all ART facilities generates the list of clients due for follow-up appointments and reschedule new dates. Professional nurses during the interview

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indicated that some of the staff members including the facility manager had training in operating the TIER.Net system. The only requirement is to train other staff members to increase coverage of people trained on the system. The generated list can be provided to the CHWs to remind clients about their appointment dates and times or by using SMS facilities.

The technological threats include the problem that despite the availability of TIER.Net system in the facility, clients moved freely from one clinic to another without being tracked (See section 4.2.2.2 (C6)). Although a Health Patient Registration System (HPRS) is installed in the ART facilities, it is not linked to the TIER.Net system.

5.3.2.5 Environmental factors

Environmental factors can positively or negatively affect the outcomes of ART services. Most clinics in the Limpopo Province are near tarred roads where pharmacy services are accessible to deliver ARVs to facilities observed by the researcher during data collection. In the current study (see Section 4.2.2.2), it was identified that some ART clients could not reach the clinics due to the distances they had to travel and lack of transport and/or money to pay for transport. Therefore, infrastructure, transport and financial expenses contributed to the missing of appointments by adult ART clients.

Almost all the communities have various stakeholders that can be utilised in addressing the challenge of the missing of appointments. Community mobilisation should be considered because it can assist in sending the message to relevant people. Traditional chiefs, locally known as ‘indunas’, could be beneficial to the community social gatherings and because the community members mostly adhere to what they are told by the tribal authorities.

5.3.2.6 Legal factors

Legal factors include those aspects concerning personal decision-making. For example, people have the legal right to make their own health care decisions. However, poor health can jeopardise people’s ability to exercise their legal rights. Reduced CD4 counts and increased viral loads due to non-adherence to ART, can increase the risk of HIV infections in communities.

Most health facilities have policies addressing privacy, confidentiality and ethical considerations. These policies serve as guidelines for avoiding legal issues and litigations. Most PNs and CHWs are aware of these and it is assumed that they received training on them and know that disclosing clients’ HIV status is illegal.

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Human Immunodeficiency Virus is a very sensitive issue with potential legal consequences. The satisfaction of the clients with the service provided in the community and at clinics should be determined in order to understand better their feelings about the ART service. The researcher also identified this as a gap that needs to be addressed to identify clients' concerns. In Chapter 4, PNs reported dissatisfaction among clients indicating that some were not happy about the service provided. Similar to CHWs, they also faced with challenges in managing ART clients, hence, a survey concerning PNs and CHWs satisfaction is needed.

In summary, the identified strengths and weaknesses were directed by the findings and included human resources, competencies, financial costs and services. Similar opportunities and threats factors from the results of this study were organised according to the PESTEL Model. The strategy development follows the SWOT analysis.

5.4 DEVELOPMENT OF THE PROPOSED STRATEGY

The factors discussed in the SWOT matrix highlight the strengths, weakness, opportunities and threats that might affect or decrease the missing of appointments by ART. This SWOT matrix analysis information assisted in development of a strategy to reduce missed appointments among adult ART clients in the Limpopo Province. The proposed strategy of this study adopts the action plan of Build, Overcome, Explore and Minimize (BOEM) in SWOT analysis factors. Figure 5.4 below summarises the processes the researcher followed developing the proposed strategy, and Table 5.5 illustrates the developed strategy.

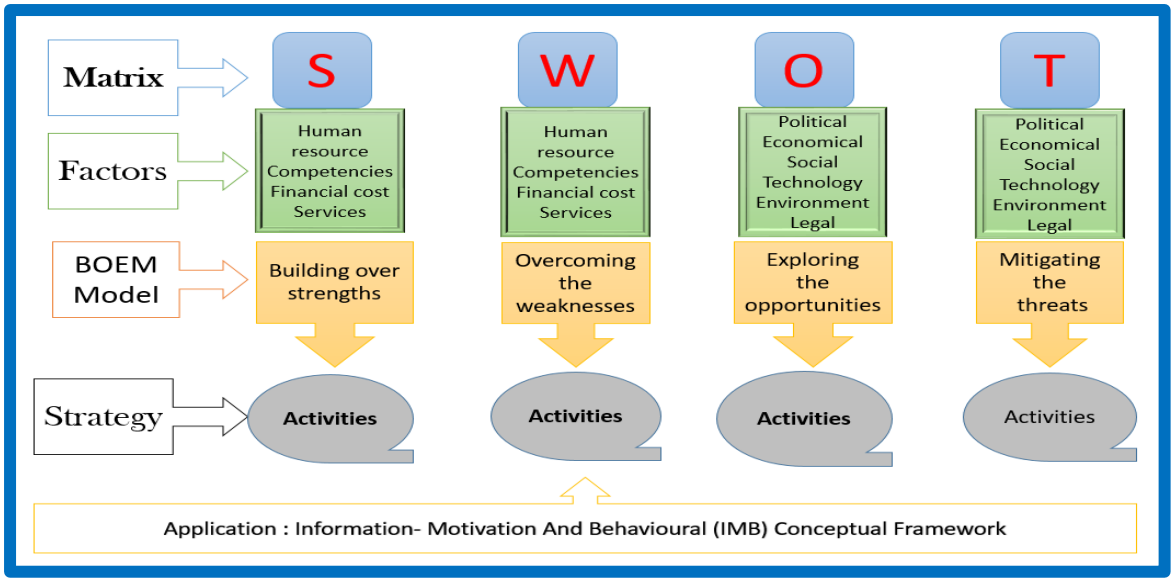

Figure 5.4 Summary of the processes followed for the development of the proposed strategy

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Table 5.5 Strategy for enhancing compliance to reduce missing of ART appointments

	BUILDING ON STRENGTHS
Factors	**Activities**
Availability CHWs **Availability NIM-ART trained PN**	✓ Motivate for extra counselling rooms for counselling to avoid rushing the queue. ✓ Conduct Weekly meeting with CHWs for feedback, reports, linking the patients newly enrolled on ART and providing them with the list of clients due for a clinic visit the next week. ✓ Provide mentoring session for CHWs and other staff members involved in the management of HIV+ clients
Knowledge of SOPs and guidelines **Adherence counselling**	✓ Compile a training needs program and communicate with deputy director for CCMT to arrange quarterly update workshops that cover all health care provers directly involved with the management of HIV+ clients ✓ Advocate for the development of standardised SOPs, checklist and algorithm that have the information to provide the clients during ART initiation and during follow up visits.
Drugs availability **Free supply of guidelines**	✓ Weekly Allocation of a person responsible for checking the availability of ARVs and request from the dispensing hospital when the stock saturation is below 50% ✓ Conduct the stock card audit and correct discrepancies ✓ Request for additional guidelines for Professional nurses, lay counsellors and community health workers.
Free services, availability, accessible and affordable	✓ Regular update the clients utilising the facility about the services offered in the facility and the new development and changes. ✓ Conduct the monthly meeting with the community stakeholders to enlighten them with the programmes offered in the facility. ✓ Orientate the clients and the community stakeholders about the universal test and treat strategy to promote early seeking of treatment. ✓ Orientate the clients about the three streams of IDEAL clinic to minimise confusion.

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Flexible	✓ Provide medication and record to CHWs or family member to deliver for the clients who cannot reach the clinic for that period. ✓ Seven days of treatment should always be maintained to prevent treatment interruption. ✓ Provide the platform or a means for rescheduling the appointment by: ● Having a rebooking register. ● Daily delegation of the person responsible for recording the rescheduled appointment. ● Providing the clients with facility number to call at least two days before the actual date. ● Teach the clients that they reschedule the appointment through CHWs.

	OVERCOMING THE WEAKNESSES
Factors	**Activities**
Limited number of trained NIM-ART PNs	✓ Motivate for provider initiation counselling and testing (PICT) to be trained simultaneously with NIM-ART to increase the uptake of professional nurses who do not have an entry point of PICT.
Limited number of CHWs	✓ Write a motivational letter to Advocacy community social mobilisation Deputy Director to motivate for a budget increase for the recruitment of CHWs according to client's ratio and distribution.
No family support	✓ Contact the family members of the clients who have challenges of missing the appointment to establish the following: ● The challenges regarding the support of their family members who are on ART ● Whether the client has disclosed the status ● The family has an understanding and knowledge of HIV management ✓ Arrange for adherence session for both the family and the clients and develop a treatment plan that will involve the family support.

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Gaps in NIM-ART training **Client-provider relationship**	✓ Motivate for the expansion of NIM-ART training content to incorporate Integrated Access to Care and Treatment (I-ACT) modules to empower the health providers with the skills that will empower the HIV+ clients on ART to cope with their condition. ✓ Motivate for the training workshop with an expert to conduct on-site training in the field of client-provider relationship for all health care providers. ✓ Create an environment and platform that will enable the clients to voice their concern and challenges. ✓ Assist the clients to come with the solution for their problems or challenges.
Guidelines not enough and not replaced if lost **Shortage of stationary**	✓ Request for the installation of the guidelines folder at the facility computer and back up in the Hard drive or memory stick. ✓ Organise the training and invite monitoring and evaluation manager to educate health care providers on how to download guidelines on their smartphones that do not require an open network. ✓ Write a request to Deputy Manager CCMT at the district to make procurement of ART clinical stationary including clients retained card and summary visits. ✓ Weekly delegation of data capture to monitoring of the availability of ART clinical stationary level and record in the stock book and communicate with the operational manager every Friday.
Non-functional Booking system **Long waiting hours**	✓ Onsite orientation of the policy of booking system should organized by operational manager. ✓ Operational managers request booking register. ✓ Calculation of the proportion of the clients to be booked for a day should be done and communicated to the staff to avoid over or under booking. ✓ Exceptional slot for rebooking should always be open and the facility decide on the additional number of clients rescheduled the appointment. ✓ Booking slot should be communicated to the clients so that they can choose which day or time is suitable for them.

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Reminder system not available **Poor linkage to care**	✓ CHWs to be given the dates that are open so that they can assist clients to reschedule the date. ✓ Revive and strengthened booking strategies in the facility in the following ● Identify days in the week where there are enough professional nurses. ● Allocation of two professional nurses where there is high number of clients booked for that day. ● Booking of clients should be done according to services. For example, those need blood collection or renewal of prescription. ● Establish a fast lane streamed where the clients with no challenges can collect treatment fast without consultation. Prepacked medication for clients on fast lane and involve enrolled nurses to dispense. ✓ Explore the reminder strategy that can be applicable and feasible for the facility, such as generating the list of clients and call them two to three days prior ART visit or SMS. ✓ Teach the family members how to monitor adherence at home so that they will remind the client to go for the clinic for treatment refill. ✓ Write a return date visible in the medication container so that the client can be reminded about the date every day when taking medication. ✓ Explore with the patient on every visit the date that can be suitable for him/her so that it will be easy to remember, or it will not have challenges such as financial constraints or time off work. ✓ Motivate for modification of clients retained card with the Deputy Director to forward the input to the province responsible for procuring client-retained cards, to be printed in the form of calendar so that it become easy for clients to read and follow the dates. ✓ Weekly generating of the list prior for ART visit to be given to CHWs every Monday to do physical reminder during home visits. ✓ Quarterly in-service training both the facility staff and the CHWs about the down referral policy should be motivated.

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	✓ Operational manager to motivate for the availability of down referral forms and down referral registers at the facility and CHWs organisations to compile the number of clients attached to which CHWs. ✓ Conduct Weekly meeting with the CHWs to allocate clients that need treatment supporters and those assessed and anticipate that they might have challenges with adherence as a whole.

	EXPLORING OPPORTUNITIES
Factors	**Activities**
Policy and guidelines available for HIV management	✓ Motivate clients, CHWs and PNs to develop positive attitudes toward the policies and guidelines through education, training, workshops and community mobilisation and community.
Budget allocated to HIV management	✓ Request budget allocated to the facility for HIV management to plan for the ordering of resources needed for the service. For example, ordering of extra medication to cater to those needing to or three months' supply.
Availability of TIER. Net version 1.4.6 phase six	✓ Daily monitoring of the functionality of the computer and TIER.Net file and backup system to maintain the information. ✓ Arrange with the expert from information management office to train all the staff member to operate the TIER.Net system so that there should not be a backlog of data when Data captures is not available. Also, to access information of the clients in question for further management.
Availability of community forums by various stakeholders	✓ Organise quarterly meetings with the community stakeholders such as traditional leaders, faith-based practitioners and local authorities to discuss challenges faced by the facility in relation to the management of clients on ART. ● Challenges should include cultural belief, defaulting treatment due to religious practices or the use of alternative traditional herbs or medication. ✓ Organise bi-annual community dialogues or imbizos that will address the modification of risky behaviour by HIV+ clients on ART, such as use of substances and alcohol.
Ethical considerations Policy for privacy and confidentiality	✓ Encourage health care providers including the CHWs to maintain ethical principles, privacy and confidentiality to avoid involuntary or unintended disclosure of clients' status.

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	✓ During adherence session, clients should also be educated about the ethical principles so that they can understand why they should take control and make decisions about their treatment plan.

	MINIMISING/MITIGATING THE THREATS
Factors	**Activities**
No policy controlling migrant clients	✓ Forward the input to the district about the development of policy the will control migrant clients
Social grants for HIV-positive clients on ART	✓ Clients should be referred to the social development department to explore other options to assist the clients so that they remain in care.
Increase stigma and discrimination at workplace **Cultural and religious barriers**	✓ Motivate for distribution of discrimination policy in farmers, mines or other private sectors. ● Organise the labour department to provide in-service training/workshop for employers annually. ✓ Make a request to the resource training centre (RTC) to organise training for traditional leaders and religious faith base leaders to be workshopped about HIV so that they can further advise their clients on the correct use of their medications.
Distance and lack of transport	✓ Each local area to identify stable clients that are staying far and have challenges with transport and prepacked medications for delivery as follows: ● Identify a place such as church or school or office of NGOs and do a partnership to deliver treatment of the clients a day before using mobile services and Chronic Care Medication distribution and Dispensation (CCMDD) model. ● Uncollected medication should be returned to the clinic after two days. ✓ Agreement made with the clients, family members and CHWs to collect treatment in a stipulated time.

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	✓ Three months' supply should be considered and clients to collect treatment the same months: for example, month-end April, month end July (client return to the facility for review) end of October collect at the external pick-up point, end of January (client return to the clinic for review). ● Clients should go to the clinic on the day booked for other investigations such as blood collection.
Lack of satisfactory survey for both the clients, CHWs and PNs	✓ Request the standardised clients' satisfactory tool to be conducted quarterly in relation to HIV management in the clinic and community. ● Discuss the comments given by clients at the staff meeting and file the report at the facility satisfactory survey. ✓ The survey should be conducted from PNs and CHWs quarterly.

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5.5 SUMMARY

This chapter examined the development of the SWOT analysis matrix generated from the findings of the current study provided by all participant groups (ART clients, PNs and CHWs). It discussed and incorporated the SWOT factors within the theoretical framework (IMB) of the study. Factors such as human resources, competencies, financial costs and services applied as strengths and opportunities. The PESTEL Model applied to opportunities and weaknesses. The strategy developed based on the variables of the SWOT matrix and the action plan also highlighted applying the BOEM approach. The next chapter addresses how to implement the strategy and the process.

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CHAPTER 6

IMPLEMENTATION OF THE STRATEGY AND VALIDATION OF THE PROPOSED STRATEGY

6.1 INTRODUCTION

The previous chapter focused on the development of the strategy guided by the SWOT analysis matrix. The proposed approach aims to reduce the missing of appointments among clients on ART. It explores building strengths and overcoming threats followed by the minimising the threats that influence poor adherence to appointments and eventually exploring the opportunities. During the SWOT analysis further opportunities were explored and strengthened because these have a crucial role in improving adherence to appointments. This chapter, however, discusses how to apply the strategy and its validation.

6.2 PRESENTATION FOR IMPLEMENTATION OF THE STRATEGY

The Transtheoretical model (TTM) guides the implementation of the strategy, which is a framework with six stages through which a person should proceed in order to transit. This framework is perceived as reliable to the process of strategy implementation because the researcher identified that it could not be implemented at one time as several stages need consideration. Chapter 1 discussed the background and a brief explanation of this model.

Missing of appointments has affected the health service and system for a very long period. This fact is evidenced by the high rate of clients defaulting, and others becoming LTFU within six months of ART initiations. Prochaska and Velicer (1997) state that the first stage of TTM is called the Precontemplation Stage where people are often unaware that their behaviour is problematic or has negative consequences and do not intend to take action in the foreseeable future. They often underestimate the pros of changing behaviour and place too much emphasis on the cons of changing behaviour. The findings of the study revealed the specific behaviour by clients and health care providers where the problems were not perceived as problematic or resulting in negative consequences. Therefore, there is a need to guide the implementers on how to apply the proposed strategy.

The first thing needed for the implementation of this strategy is to conduct awerenes and trainings for those involved, which enables the individuals to recognise that there is a need to

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change and adapt to the new situation or behaviour. This is the second stage (Contemplation) described by Prochaska and Velicer (1997) where it indicates that people recognise that their behaviour may be problematic, and more thoughtful and practical consideration of the pros and cons is required to change it. During this training, people will examine their behaviour that contributed to the missed appointments. The training phase may last for three months to ensure coverage of all those concerned to implement the strategy. These individuals are health care providers, clients, NGOs and even community stakeholders.

The third stage is to develop a plan that will prepare the implementation the strategy. Prochaska and Velicer (1997) indicate in the third stage of preparation (Determination) facilitate the need to adapt to new behaviour or skills. Prochaska and Velicer (1997) further highlight that people become ready to take action within 30 days after training. The action plan will guide them as to where to start and prioritise the activities that need urgent attention. The action plan should develop so that it is logical and easy to achieve. As a result, people will be motivated to take small steps towards achieving their goals or behavioural changes.

The action plan.is the fourth stage in TTM and it intensify the strategy implantation. The activities that are difficult to implement should receive more attention as some are imported in the process of change but challenging to achieve. For example, activities like controlling the missing of appointments by the workers because there is a need to involve the employer in various sectors. However, Prochaska and Velicer (1997) mention that once people in this stage (of action) start to change their behaviours, they intend to keep moving forward. According to Prochaska and Velicer (1997), this is a critical stage because people tend to regress or relapse under pressure. During this implementation phase, more support is needed from the DoH to PNs, CHWs and clients to encourage and motivate individuals to be successful. Support visits and monitoring is most necessary in this phase.

After training and implementation of the strategy, the fifth stage is the development a maintenance plan of the strategy to facilitate sustainability**.** The researcher has observed that sustainability poses a severe challenge in many health care facilities. Policies and guidelines are implemented, and training conducted initially but there is no ongoing monitoring or evaluation, so some of the activities or programmes collapse. In this phase, Prochaska and Velicer (1997) emphasise that people should work to prevent relapse and maintain their changes. This stage is called Maintenance and it is necessary for the department to have strategies to maintain the ongoing implementation of the strategy. Feedback, meetings, monitoring and evaluations, auditing of the progress of strategy implementation and peer

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reviews can be considered in this stage. This process can be conducted at the facility, district and provincial levels on a quarterly base and once adopted can continue bi-annually.

The last stage in which Prochaska and Velicer (1997) called the Termination stage is when people master the new behaviour and have no intention or desire to return to their unhealthy behaviour. In this case, the facility or local area levels should monitor the developed strategy and evaluate whether there is a reduction in the number of missed appointments. If not, self-evaluations are essential against the developed approach to identify the gaps in implementation or if there is a need to revise the strategy. Ongoing on-site in-service training at the facility levels should be conducted involving all stakeholders concerned including health talks for clients and family members, community outreach and imbizos.

In summary, Prochaska and Velicer (1997) state that the six stages also apply to health care providers and clients and there is a need to recognise that their behaviours need to transform to adapt well to the new situation. The process of transition should be gradual so that a person does not relapse on the way. By doing so, people can identify the aim of the developed strategy and reinforce their positive attitude.

6.3 VALIDATION OF THE PROPOSED STRATEGY

The aim of validating in this study is to assess whether the proposed strategy addresses the main purpose of the study, which is to reduce the missing of appointments among clients on ART. Chinn and Kremer (2015) define validation as a scientific process to check accuracy. In this study, it was conducted to identify whether the developed strategy is applicable and feasible. Furthermore, the validation process gathers feedbacks and recommendations from the implementers to facilitate and smooth the implementation of the strategy.

A self-administered questionnaire was developed, and the respondent will tick the appropriate box to answer the question. The researcher delivered a copy of the strategy and the questionnaires and later collected these once the respondent completed the form. The respondent had a period of seven to ten days to respond.

6.4 METHODOLOGY

For validation of the strategy, a quantitative research design applied using a non-experimental design. De Vos et al. (2015) explain that some research states that a non-experimental design is typically used in descriptive studies and selected here for measuring all relevant variables

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at a specific time. The variables are not manipulated, and do not include the control group. The researcher can use this type of survey to determine if the challenges of missed appointments will be addressed using the developed strategy.

6.4.1 Population

The population involved for validation included the Director of Comprehensive Care Management Therapy and five Assistant Directors of Comprehensive Care Management Therapy from all districts of Limpopo Province, and 15 operational managers in the facility.

6.4.2 Sampling of the Facility and Respondent

Non-probability purposive sampling method was used to sample the facilities and respondents to participate in the process of strategy validation. De Vos et al. (2015) mention that 'in non-probability sampling the odds of selecting a particular individual are not known because the researcher does not know the population size'. The researcher decided to select these participants because they are directly involved in the implementation of the HIV programme.

6.4.3 Data Collection Method

The researcher telephoned the respondents to make an appointment to visit them to introduce and explain the proposed strategy. She gave them a brief outline and expectations for the strategy and explained the composition of the questionnaire. Participation was voluntary, and all participants signed the consent form before completing of the questionnaire. This signed consent form was sealed in an envelope and placed in a sealed container.

Each respondent received the self-administered questionnaire in an unsealed envelope to complete in his/her own time but within seven days. The researcher collected the completed questionnaire in a sealed envelope at each district office in the last week of the month.

6.4.4 Data analysis

Simple descriptive statistics analysed and summarised the data. The Importance-Performance Analysis (APA) quadrant approach adapted from Phadermroda et al. (2019) and used to categorise comments and inputs (see the discussion of the findings) from the respondent.

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6.4.5 Presentation of the Results

Table 6.1 and Figure 6.1 of the IPA matrix present the findings from the respondent (N=21).

6.4.5.1 Biographical Data of the Respondents

A total number of 21 respondents participated in the process of strategy validation. All respondents completed the consent form and questionnaire. The age of respondents ranges from 39–49 years was 57% (n=12), and from 50–59 years 38% (n=8) and one respondent aged above 60 years 5% (n=1). All respondents work at the DoH, and 71% (n=15) were in their actual post, whereas 29% (n=6) were seconded to act as operational managers.

Almost all respondents 81% (N=17) had more than five to fifteen years of working experience in the current position regardless of whether the current position is temporary. Only 19% (N= 4) have more than 15 years in their current post. The years in the current post denoted that respondents have experience in DoH services including HIV management. This serves as an advantage because the respondent understands what is required for ART services, and it was easy for them to comprehend the developed strategy.

Almost half of the respondents 52% (n=11) have diplomas and post-graduate diplomas in the Nursing Sciences, 24% (n=5) have a degree in Nursing Science and 24% (n=5) have a Master's degree in Nursing Science and further, among these five two have a Master's in Public Health. No one among the respondents has or has registered for a degree. The level of education is very important in assessing the level of understanding, knowledge and skills of a person.

Almost all respondents 95% (n= 20) received training on NIM-ART and PICT. Fewer respondents 33% (n=7) received adherence counselling training, whereas 29% (n=6) trained on disclosure counselling. Almost 100% (n=21) attended the Comprehensive Care Management Therapy (CCMT) workshop. This training is significant for the management of HIV-positive clients. The study identified adherence counselling and disclosure as some of the factors affecting adherence to appointments indicating that there is a need to include managers in training so that they can monitor and evaluate the implementation of the service with better understanding

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Table 6.1 Result of validation – Building on strengths

Objectives on Strengths	Validation strategy activities	achievable	%	Not achievable	%
1. To strengthen the availability of human resources.	Motivate for extra counselling rooms to avoid rushing the queue.	19	90	2	**10**
	Conduct Weekly meeting with CHWs for feedback, reports established to link the clients newly enrolled on ART.	21	100	0	**0**
	Provision of mentoring sessions for CHWs and other staff members involved in the management of HIV+ clients.	21	100	0	**0**
2. To capacitate human resources with the competency skill and knowledge.	Compile a training needs programme and communicate with Deputy Director for CCMT to arrange quarterly workshops to include all health care provers directly involved with management of HIV+ clients.	21	100	0	**0**
	Advocate for the development standardised SOPs, checklist and algorithm that have the information that will guide the health care providers on step to follow and key information to discuss with the clients during ART initiation and during follow up visits.	21	100	0	**0**
3.To promote good quality standard care.	Weekly Allocation of a person responsible for checking the availability of ARVs and request from the dispensing hospital when the stock saturation is below 50%.	21	100	0	**0**
	Conduct the stock card audit and make correction for discrepancies on weekly basis	21	100	0	**0**
	Request for additional guidelines for Professional nurses, lay counsellors and Community Health workers.	21	100	0	**0**
4. To promote uninterrupted services delivery.	Regular update the clients utilising the facility about the services offered in the facility and the new development and changes.	21	100	0	**0**
	Conduct the monthly meeting with the community stakeholders to enlighten them with the programmes offered in the facility.	21	100	0	**0**
	Orientate the clients and the community stakeholders about universal test and treat (UTT) strategy to promote early seeking of treatment.	21	100	0	**0**
	Orientate the clients about the three stream of IDEAL clinic to minimize confusion	21	100	0	**0**
5. To promote adherence to medications and improve clinic attendance.	Provide medication to CHWs or family member for the clients who cannot reach the clinic for that period and record in a client's ART file	16	76	5	**24**
	Seven days treatment always maintained to prevent treatment interruption	21	100	0	**0**

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	Provide the platform or a means for rescheduling the appointment by: ✓ Having a rebooking register ✓ Daily delegation of person responsible for recording the rescheduled appointment ✓ Providing the clients with facility number to call at least two day before the actual date or reschedule through CHWs	19	90	2	**10**

Result of validation – Overcoming the weaknesses

Objectives to overcome weaknesses	Validation strategy activities	achievable	%	Not achievable	%
1. To expand the number of trained human resources.	Motivate for provider initiation counselling and testing (PICT) to be trained simultaneously with NIM-ART to increase the uptake of professional nurses who does not have entry point of PICT.	19	**90**	**2**	**10**
2. To expand the number of CHWs to meet the coverage ratio.	Write a motivational letter to Advocacy community social mobilization Deputy Director to motivate for budget increase for the recruitment of CHWs according to client's ratio and distribution.	15	**71**	**6**	**29**
3. To promote family involvement and support.	Contact family members of the clients who have challenges in missing appointments (Only who have disclosed).	20	**95**	**1**	**5**
	Arrange for adherence session for both the family and the clients and develop a treatment plan that will involve the family support.	20	**95**	**1**	**5**
4. To intensify the quality of NIM-ART training.	Motivate for the expansion of NIM-ART training content to incorporate Integrated Access to Care and Treatment (I-ACT) modules to empower the health providers with the skills that will empower the HIV+ clients on ART to cope with their condition.	21	**100**	**0**	**0**
5. To promote client-provider relationship in order to improve communication.	Motivate for the training workshop with an expert to conduct on-site training in the field of client-provider relationships for all health care providers. ● So health providers will be equipped with skills for promoting conducive environment that will enhance client-Provider relationship.	20	**95**	**1**	**5**
6. To maintain the availability of guidelines and other ART clinical stationary.	Request for the installation of the guidelines folder at the facility computer and back up in the Hard drive or memory stick.	21	**100**	**0**	**0**
	Organise training and invite monitoring and evaluation manager to educate operational managers on how to download guidelines on their smart phones	21	**100**	**0**	**0**

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	that does not require network to open. Operational Managers to teach the whole staff.				
	Write a request in a quarterly basis to Deputy Manager CCMT at the district to make procurement of ART clinical stationary including clients retained card and summary visits.	21	**100**	**0**	**0**
	Weekly delegation of data capture to monitor the availability of ART clinical stationary levels and records in the stock book and communicate with operational manager every Friday about the stock level.	21	**100**	**0**	**0**
7. To revive and strengthen booking system.	The operational manager should organise poor linkage to care on-site orientation of the policy of booking system.	21	**100**	**0**	**0**
	Operational managers to make a request for booking register or Copy and bind the forms.	21	**100**	**0**	**0**
	Calculation of the proportion of the clients to be booked for a day and communicated to the staff to avoid over or under booking.	14	**66**	**7**	**34**
	Exceptional slot for rebooking should always be open, and the facility decides on the additional number of clients rescheduled for these appointments.	19	**90**	**2**	**10**
	Booking slot should be communicated to the clients so that they can choose which day or time is suitable for them.	18	**86**	**3**	**14**
	CHWs given the dates that are open so that they can assist clients to reschedule the date while in the community.	19	**90**	**2**	**10**
8 To reduce long waiting hours and long queues	Identify days in the week where there are enough PNs.				
	Allocation of two PNs where there are high numbers of clients booked for that day.	21	**100**	**0**	**0**
	Booking of clients made according to services. For example, those who need blood collection or renewal of prescription.	18	**86**	**3**	**14**
	Establish a fast lane where the clients with no challenges can collect treatment quickly without consultation.	21	**100**	**0**	**0**
	Prepacked medication for clients on the fast lane and involve enrolled nurses to dispense.	15	**71**	**6**	**29**

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9. To establish reminder system that will enhance adherence to appointment.	Indicate which strategies can be Adopted for reminding the clients which can be applicable and feasible for the facility ● Call them two to three days prior to ART visit or SMS.	5	**24**	**16**	**74**
	● Teach the family members how to monitor adherence at home so that they will remind the client to go to the clinic for treatment refill.	21	**100**	**0**	**0**
	● Write a return date visible in the medication container so that the client can be reminded about the date every day when taking medication.	20	**95**	**1**	**5**
	● Explore with the patient on every visit the date that can be suitable for him/her so that it will be easy to remember, or it will not have challenges such as financial constraints or time off work.	19	**90**	**2**	**10**
	● Motivate for modification of clients retained card with the Deputy Director to forward the input to the province responsible for procuring client-retained cards to be printed in the form of a calendar so that it is easy for clients to read and follow the dates.	21	**100**	**0**	**0**
	Generate the list weekly prior for ART visit to be given to CHWs every Monday to do physical reminder during home visits.	21	**100**	**0**	**0**
10. To improve linkage to care and promote client's retention to ART	Quarterly in-service training both the facility staff and the CHWs about the down-referral policy should be motivated.	21	**100**	**0**	**0**
	Operational manager to motivate for the availability of down referral forms and down-referral registers at the facility and CHWs organisations to compile the number of clients attached to which CHWs.	21	**100**	**0**	**0**
	Conduct Weekly meeting with the CHWs to allocate clients that need treatment supporters and those assessed and anticipate that they might have challenges with adherence as a whole.	20	**95**	**1**	**5**

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Result of validation – Exploring Opportunities

Objectives to strengthen opportunities	Validation Strategy activities	achievable	%	Not achievable	%
1. To provide standard quality of care and to adhere to the scope of practice	Organise quarterly training for both the clients, CHWs and PNs to develop positive attitudes toward the policies and guidelines through education, workshops and community mobilisation and community outreach.	21	100	0	0
2. To enhance proper utilisation of the budget allocated for the facility.	Record the stock invoices whenever receiving the stock.	14	67	7	33
	Assess the budget allocated and determine whether it is achievable to order extra medication to cater those need two- or three-months supply.	19	90	2	10
3. To sustain information for Monitoring and evaluation.	Daily monitoring of the functionality of the computer and TIER.Net file and backup system to maintain the information.	21	100	0	0
	Arrange with the expert from information management office to train all staff members to operate the TIER.Net system so that there is no backlog of data when Data capture is not available. Also, to access information for the clients in question for further management.	21	100	0	0
4. To strengthen community engagement	Organise quarterly meetings with the community stakeholders such as traditional leaders, faith-based practitioners and local authorities to discuss the challenges faced by the facility in relation to management of clients on ART.	18	86	3	14
	Organise bi-annually community dialogue or imbizo to address the modification of risky behaviour by HIV+ clients on ART, such as use of substances and alcohol.	21	100	0	0
5. To promote adherence to ethical principles.	Encourage health care providers including the CHWs to maintain ethical principles, privacy and confidentiality to avoid involuntary or unintended disclosure of client's status.	21	100	0	0
	Ethical principles should form part of adherence counselling to facilitate decision-making about the treatment plan.	21	100	0	0

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Result of validation – Minimising of Threats

Objectives to minimise threats	Validation Strategy Activities	achievable	%	Not achievable	%
1. To promote control over migrant clients	Forward the input to the district about the development of policy the will control migrant clients.	21	100	0	0
	Migrants who do not have a passport or work permit should be encouraged to bring the letter from traditional offices or ward counsellor during a clinic visit.	6	26	16	74
2. To ensure continuous and uninterrupted service delivery	Community members should be engaged not to disrupt essential services during service delivery protest so that service should always be accessible.	21	100	0	0
	Hold the meeting with the political leaders through clinical committee chairperson or the operational manager of the facility to address their community.	21	100	0	0
3. To promote understanding of HIV condition at the workplace	Request that the Assistant Director HIV testing services to consider the distribution of stigma and discrimination policy in farmers, mines or other private sectors.	17	81	4	19
	Organise the Labour Department to provide in-service training/ workshop for employers annually.	21	100	0	0
4. To incapacitate traditional Authorities and religious Authorities about HIV management.	Request the Assistant Director ACSM communicate with Resource Training Centre (RTC) to organise training for traditional leaders and religious faith-based leaders to be workshopped about HIV so that they can further advise clients on the correct use of their medications.	21	100	0	0
5. To promote consistent treatment supply to clients affected by distance and transport.	Each local area to identify stable clients that are staying far and have challenge with transport and prepacked their medications for delivery as follows: • Identify a place such as church or school or office of NGOs and do a partnership to deliver treatment for the clients a day before using mobile services	11	52	10	48
	Three months' supply should be considered for clients living far away from the facility.	21	100	0	0
6. To assess satisfaction about the HIV Management service provision.	Request the standardised clients' satisfaction tool to be conducted quarterly concerning HIV management in the clinic and community.	21	100	0	0
	Discuss the comments given by clients at the staff meeting, and the report filed in the facility satisfaction survey	21	100	0	0
	The survey should also be conducted with PNs and CHWs quarterly.	21	100	0	0

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6.5 DISCUSSION OF VALIDATED RESULTS

Twenty-one respondents participated in the study. The questionnaire evaluated whether the actions in the proposed strategy are or are not achievable. There was no spoiled questionnaire received from respondents. A discussion of the findings took place according to SWOT.

6.5.1 Data Validation Results over Strengths

The results in this area reveal that almost all respondent seconded the actions in the strategy that build on the strengths to facilitate the reduction of missed appointments among clients on ART. All respondents 100% (N=21) indicated that it is possible to maintain the human resources needed for the HIV services. According to the IMB theory, people need knowledge and skills to be motivated to act. It was observed from the respondents' answers that it is feasible to have feedback meetings to empower health care providers with knowledge and skills, organise mentoring sessions and a more conducive working environment; however, only 90% (n=19) agreed that it is realistic to motivate for extra counselling rooms to reduce long queues. Keeping health care providers competent and up to date is viable through the availability of guidelines, and all respondents find it easier to organise the availability of guidelines.

All respondents 100% (n=21) indicated that capacitating human resources with knowledge and skills is significant and a training needs programme should be compiled to identify those who should attend. Health care providers need to follow specific guides when managing the clients; all respondents 100% (n=21) agreed that there is a need to motivate for a standardised tool that will facilitate uniformity in managing HIV clients. Also, respondents indicated that it is realistic to maintain the optimum stock levels of the ARVs provided the monitoring of stock improves.

Furthermore, all respondents 100% (n=21) find it possible to update all clients regularly with the services available in the facility for better understanding. All respondents 100% (n=21) agreed that accessible, affordable, feasible and flexible services could be available by making extra provision for clients to receive their medications in time or to extending appointment dates by providing additional pills to suit their programme. However, 26% (n=5) of respondents find it impossible to deliver medication to clients at the community via the CHWs as they question the issue of safety and storage. Almost 10% (n= 2) of respondents do not support clients arranging their clinic attendance dates. However, all respondents 100% (n=21) agreed

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that it is possible to keep treatment for up to seven days so that the client has the chance to return to the clinic within an acceptable period. According to the definition by Nkambule (2012), a person is declared to have missed the appointment seven days after the initial return date.

6.5.2 Data Validation Results over Weaknesses

The strategy includes the actions or activities that can be put in place to overcome the weaknesses identified during the study that range from a shortage of skilled human resources and guidelines to poor health services. In this area, almost all respondents 100% (n=21) agreed that it is achievable to motivate for an expansion of the NIM-ART course, installation of guidelines in facility computers or advocate for training to assist in how to download the guidelines. Moreover, respondents find it possible to maintain 50% of the average clinical stationary through weekly monitoring. Client-provider relationships were one of the factors identified that increases the missing of appointments among HIV+ clients on ART because of poor involvement and communication. The respondents 100% (n=21) indicated that through the client-provider relationship the rate of missed appointments could be reduced.

It was found from the study that there is confusion around the booking system where the clients and nurses did not understand the system. Also, poor implementation of the booking system emerged as a factor contributing to long queues, extended waiting hours and unbalanced human resource allocation. All respondents 100% (n=21) agreed that the booking system should be revised to reduce those challenges. A booking system can be modified through training and workshops to increase understanding of how to use the system. However, 33% (n=7) indicated that it would not be realistic to calculate the proportion of the clients to be booked for a day as they have high volume of clients on ART plus other chronic clients. Almost 10% (n=2) continued to indicate that they cannot keep the open slots because the number of clients already booked for a day will have been exceeded. But the majority 90% (n=19) find it possible to leave an exceptional slot for rescheduling.

Apart from using the booking plan to reduce the long waiting hours and queues, the establishment of a fast lane for stable clients was supported by almost all the respondents 100% (n=21). The strategy suggested that client's book according to the nature of the service required. Only 86% (n= 18) agreed it was possible to reduce long queues and long waiting hours. However, 14% (n= 3) find it impossible.

The reminder system was identified as being challenged during the study and there is no proper reminding system to facilitate adherence to appointment by clients. According to the

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validation, the establishment of reminder strategies gained most support from the respondents. However, the issue of telephone calls and SMS was not supported 74% (n= 16) given the reason of lack of resources such as free telephones line and free SMS services. Also, respondents mentioned that it is time-consuming and expensive.

During the study, the CHWs mentioned that there is no proper association for referrals between them and the clinic staff. One of the objectives of the strategy aims to improve clients' linkage to care and promote retention to ART. Almost all respondents 100% (n=21) find it achievable to improve the gap by training health care providers on the policy of down referrals and the policy and forms available to all facilities.

6.5 DATA VALIDATION RESULTS OVER OPPORTUNITIES

Opportunities are variables that can be manipulated to enhance the achievement of the set goal and explored here to identify how to use these to reduce the missing of appointments. Most agreed that the actions suggested in the strategy are achievable. The availability of guidelines only does not guarantee that the health care provider knows the content and almost 100% (n=21) agreed that regular training for all health care providers implementing HIV services is necessary.

Another opportunity was that HIV Testing Services (HTS) has a conditional budget granted to procure resources and drugs needed for HTS. Here the strategy suggested that the budget should be made available for facilities to plan for the resources needed and if possible, to order extra medication to extend the supply. Almost 90% (n=19) find it possible to monitor their budget for their facility, but the challenge was the recording of invoices where 33% (n=7) indicated that it is not achievable.

Most respondents agreed that having the information for the facility is significant for monitoring the progress and challenges faced by the unit. Missed appointment are monitored through weekly TIER.Net reports, so it is important to ensure that the system is fully functioning. All respondents can monitor the functionality of the computer with the operational manager and data capture dail. They also agreed that other staff members should be trained to operate the TIER.Net system to boost their understanding of data elements.

Community engagement is an approach to be used to communicate messages to the community. Some community members follow and practice what community leaders tell them

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rather than what they hear from the health providers. In this situation, almost all respondents 100% (n=21) find it possible to utilise community authorities to health educate their community. The strategy suggested meetings and training for community authorities such as traditional leaders and faith-based leaders, only 86% (n=18) think it is possible to mobilise them. Around 14% (n=3) indicated that it would be difficult to mobilise traditional leaders in the community due to cultural and religious beliefs.

During the nurses' prayer day held in Bolivia Lodge (2018), nurses were cautioned about the increasing lawsuits affecting the DoH in Limpopo Province due to malpractice. Respondents indicated that ethical policies are important in order to prevent malpractices and training for health care providers is required to improve their knowledge. All respondents agreed that it is only possible to do this if combined with other training such as adherence or/and disclosure counselling. The respondents added that even for the SOPs ethical consideration is needed and communicated to all health care providers and community stakeholders.

6.5.4 Data Validation Results over Threats

Threats are factors that seriously challenge any situation. In this study, threats were factors perceived to affect adherence to appointment by clients on ART. It was noted that it is difficult to control the migrants as they move from one place to another without legal documents. One participant mentioned that he uses several names so that he cannot be traced. The strategy proposed that a policy to control migrants should be in place, and almost all respondents 100% (n=21) agreed. In contrary, only 24% (n=5) agreed that it is possible to control migrants if they have a document that identifies the compared to 76% (n=16) who said it is impossible to practice monitoring over migrant clients.

Some participants in the study had challenges in getting time off from work to attend the clinic aggravated by a lack of disclosure to their employers because they were afraid of discrimination and stigma. The researcher found that it is important to educate the employers about the policy of discrimination and stigmatisation in collaboration with the Department of Labour cencerning the basic conditions of the Employee Act. Almost all respondents 100% (n=21) agree that the Department of Labour should offer annual training. A further 81% (n=17) of the respondents support the issue of training the employers and making provisions to supply them with guidelines and policies.

Cultural and religious barriers were perceived to impact the missing of appointments because people tend to use alternative medicines and forget the medical treatments. It was discussed

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in the opportunities section that the use of community stakeholders would assist in minimising this risk that has negative health outcomes, and this was agreed by all respondents.

The strategy also aimed at improving the consistency of supply of treatments for clients who are affected by distance. However, 51% (n=11) find it achievable to arrange a pick-up point in the community where the mobile service will deliver medication after three months. However, 49% (n=10) find it is not realistic due to the reason of safety and recording. In its place, all respondent indicated that three months' supply could be considered.

Lastly, all respondents agreed that a satisfactory survey is essential to raise the spirits of health care providers and clients, as HIV is a sensitive condition where people need assistance. All participants agreed that a satisfactory survey would boost morale.

6.6 Summary of the comments and inputs by respondent using The Importance-Performance Analysis quadrant approach adapted from Phadermroda et al. (2019)

Phadermroda et al. (2019) defined IPA as a technique for analysing customer satisfaction concerning an organisation's products or services used for a period as a tool for understanding customers' needs, particularly in areas such as higher education, tourism and government services. It measures customer satisfaction on two components of the service attributes, that is the importance of the service to the customer and the performance of the organisation in providing the service. The researcher adopted this approach because it was observed to be relevant to analyse the comments from the respondent based on the strategy developed. The IPA model divides into quadrants from the intersection of these two components creating a two-dimensional matrix. During the comments by the respondent, the researcher noted that the inputs must be categorised as per Figure 6.1 below:

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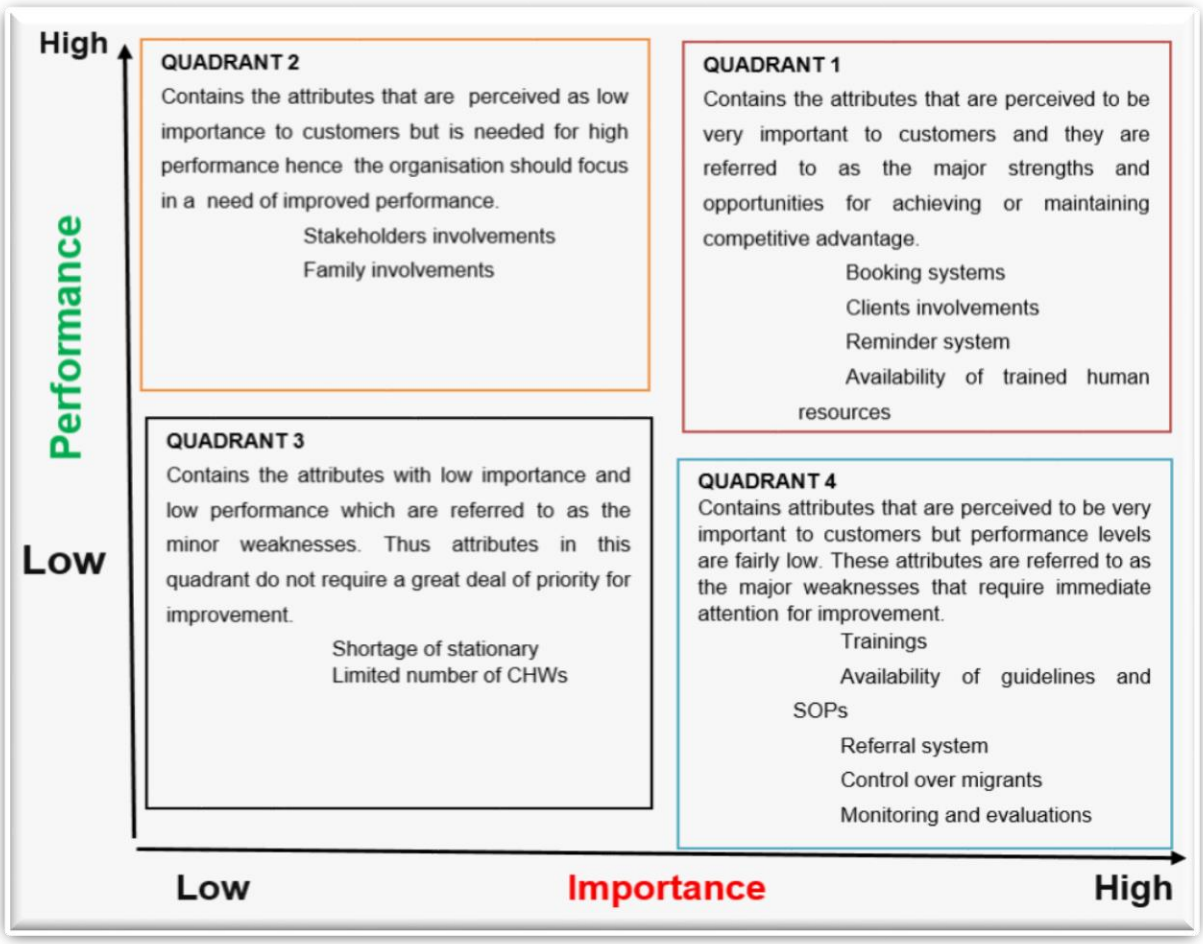

Figure 6.1 Importance of the Performance Analysis quadrant approach adapted from Phadermroda et al. (2019)

The respondents highlighted that the attributes in *Quadrant 1* are the essential attributes in the strategy that might reduce the missing of appointment if fair practices are implemented. In the end, these attributes may be a significant strength for HIV management services.

Quadrant 2 stipulates that attributes in this area and their functions are perceived as not significant, but they are needed to achieve the organisational goals. The respondent highlighted that in most cases the use of community stakeholders is mostly ignored. Participants further mentioned that to resolve the issues hindering health care services it is better to start with the community. Consequently, there is support for community stakeholder's engagement. Family involvement was another that the respondents felt can have an impact on improving missing of appointments and LTFUs.

In *Quadrant 3*, the respondents identified a shortage of stationary and limited number of CHWs as having no effect on the health care services and considered as minor weaknesses because

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of the minimal impact in reducing missed appointments by ART clients. The respondents mentioned that in most cases where there are shortages of stationary, provisional papers are always made and client arrives with the small booklet to note the return dates. The respondent further mentioned that the challenge is not the limited number of CHWs, rather their utilisation. It was further highlighted that each facility should only assign the clients with challenges to be closely supervised by CHWs and family members. There is no need to prioritise the motivation for expansion of CHWs, although at some point it will be necessary due to the increased burden of chronic conditions.

The attributes in the last *Quadrant 4,* according to respondents are the significant weaknesses needing immediate attention. Recent observations note that training is less frequent and the application rate of the HCWs relatively low. Moreover, training for non-nursing staff such as lay counsellors and CHWs is omitted, and they recommend that the department consider this matter.

Guidelines and SOPs serve as a support and tools to ensure the provision of quality standard service, and recommendations were that those items be always available in all facilities covering all relevant people. Supervision, monitoring and evaluation are lacking due to competing activities and lots of managerial' meetings as indicated by the respondents. Furthermore, the respondent added that these affect the performance of the facility because no monitoring is going on, so the challenges of missed appointments will increase unnoticed.

Also mentioned was that the referral system needed urgent attention because clients become lost in the community and do not follow the instructions for their treatment plan. The most pressing matter according to respondents is the control of the migrants. They further state that if migrants still have the freedom to move from one place to another collecting medications, there is no way the strategy can work to reduce missed appointments. Therefore, serious intervention is required.

6.7 SUMMARY

Twenty-two (22) respondents participated in the validation of the strategy. The researcher used the same facilities to collect data for the main study because they have an idea of the subject matter. The respondents found it possible to implement the strategy and believe that it can assist in the missing of appointments. During validations, the respondents agreed that the strategy should be introduced in phases rather than at once. Priorities should be to those

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that required urgent attention and easy to implement. Priorities include the booking system, client-provider engagement, reminder system and training of the health care providers. Suggestions and recommendations made by respondents were analysed using the Importance-Performance Analysis (IPA) quadrant approach adapted from Phadermroda et al. (2019). The next chapter presents the conclusions, limitations, recommendations and summary of the study.

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Chapter 7

Conclusions, Limitations, Recommendations and Summary

7.1 INTRODUCTION

The previous chapter discussed how the developed strategy will be implemented in the health facility by PNs, clients and CHWs and explained the process of strategy validation where data were collected and analysed using the SPSS version 24.0. The present chapter presents the conclusion, limitations, recommendations and summary of the study.

7.2 CONCLUSIONS

The main purpose of the study was to develop a strategy aimed to reduce the missing of appointments among clients on ART in Limpopo Province. The study objectives were divided into three phases, and established as follows:

7.2.1 Phase 1 objectives

Phase 1 objectives mainly focused on the factors identified as contributors to the missing of appointment by ART clients and suggested strategies perceived by all groups of participants. The four objectives guided the interview of the three categories namely; the clients, PNs and CHWs in Phase 1.

7.2.1.1 First Objectives

Describe the behaviour of the HIV-positive clients that contributed to the missing of appointments in the Limpopo Province.

Several behaviours identified in this study contributed to poor adherence to appointment by HIV+ clients on ART. Behaviours including the use of alcohol and substance, using alternative medications while on ART, and intentionally skipping pills to prolong the return dates. The study also found that some clients did not adhere to the prescribed dose; instead of taking it twice daily, some of the clients indicated that they took it once daily; thus, they remain with most of the treatment at home. It was also noted that one client collects medication from

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various clinics, whereas others they play 'Stokvel' (gambling) with the treatment and eventually are considered as skipping the appointment at the other clinic.

7.2.1.2 Second Objectives

Describe the socio-economic and environmental factors that contribute to the missing of appointments by HIV-positive clients in the Limpopo Province.

Socio-economic and environmental factors were identified in this study as some of the contributory factors leading to the missing of appointments among ART clients. Among other reasons, these include the lack of family support, lack of disclosure and distances from the clinic and were most often observed to hinder adherence to appointments. Beside the socio-environmental factors, economic factors emerged during the research where most clients in the study complained of a lack of money, as they did not qualify for social grants.

7.2.1.3 Third Objectives

Explore the health service-related factors that contribute to the missing of appointments by HIV-positive clients in the Limpopo Province.

Besides behavioural and socio-environmental factors, health-related services were explored to identify whether these influence the missing of appointments. The study revealed that factors such as lack of client engagement and poor booking systems most frequently influenced the missing of appointments by clients on ART. Poor booking systems also resulted in long queues and long waiting hours emphasised by most clients during the interviews.

Chapter 4 summarises the results from all three groups. The IMB model was used to conceptualise the finding of the study.

7.2.1.4 Fourth Objectives

This objective was to explore the strategies suggested by adult ART clients, PNs and CHWs on how to address the challenges of missing of appointments.

The summary of the suggested approach and strategies received from the three groups of participants, that is, the ART clients, PNs and CHWs are presented in Tables 5.8 and 5.9 in

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Chapter 4. A literature control supported the strategies suggested by the participants and explored more strategies used by various countries.

7.2.2 Phase 2 objectives

Phase 2 of this study aimed to develop the strategy to reduce missing of appointments among HIV+ clients on ART. The researcher developed the strategy based on a SWOT analysis. After developing the SWOT analysis matrix, the BOEM approach was used to strengthen the strategy as alluded to in Chapter 3 and implemented in Chapter 6.

7.2.3 Phase 3 objectives

Phase 3 objectives aimed to validate the proposed strategy developed by the researcher guided by the findings from the participants in this study. The process of validation and the findings are discussed in Chapter 6. However, Chapter 6 first outlined how the strategy will be implemented by the health care providers and apply to the clients on ART. During the validation of the strategy, the process of implementation the strategy was presented.

Validation of the strategy took place at the selected health centres where the target group was the operational managers. Where there were no operational managers, the person seconded to be clinic manager participated (15). The strategy was also validated with the Director of CCMT at the province (1) and deputy directors of CCMT in each district (5).

The respondents agreed that the strategy needs to be implemented in phases, where training and workshops should be the first phase so that people involved have the knowledge. Training should also involve community stakeholders so that they can help to identify clients who have challenges in adhering to appointments because of community-related factors.

7.3 LIMITATION OF THE STUDY

The response rate was acceptable for the study despite data saturation, but the findings cannot be generalised to other populations. The study only involved selected clients on ART who have missed more than two appointments in six months, selected NIM-ART PNs and CHWs at selected NGOs. Some Health Care Centres were not involved in this study; only those which the researcher identified as having challenges related to the high number of clients missing appointments. Therefore, transferability and ART clients' generalisation of the

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research findings to other health centres and clinics including other provinces may be impossible. The study was conducted in the Limpopo Province only; some provinces may not have the same experiences. The strategy developed applies to ART clients with challenges of missing appointments and cannot be generalised to other chronic clients.

As HIV is a very sensitive condition, under-reporting or over-reporting of the findings may occur due to the complex questions asked during the interviews. Another limitation was that it would have clarified many issues around the reasons why they miss their appointment if family members, partners, employers and lay counsellors were included in this study to get their views.

7.4 RECOMMENDATIONS:

7.4.1 Provincial Department of Health HIV/AIDS and STI (HAS) Directorate

- Discuss with NPOs that offer training and Resource Training Centre (RTC) to expand the training, workshops and up-to-date training of guidelines and SOPs for HIV Comprehensive Care Management Therapy.
- Advocate for collaboration or merging of specific workshops to be simultaneous, such as Provider Initiative Counselling and Testing (PICT) and NIM-ART; Adherence counselling, I-ACT and Disclosure training. The integration of training saves time, is cost effective and increases the scope of knowledge and skills.
- Motivate for the development of a standardised algorithm or checklist that need to be followed during ART initiations and follow-up visits. Algorithms can be in the form of a poster displayed in each counselling or consulting room, so they are easy to reach and follow.
- Budget increase for ARVs treatment to enable double supplies to the clients with challenges of distance and inability to get time off work.
- Advertise post and appoint assistant pharmacist in all facilities to assist in the management of dispensary, stock management and prepare pre-packed medication for clients who do not require consultation.
- Intensify and strengthen the implementation of Centralised Chronic Medicines Dispensing and Distribution (CCMDD).
- Identify sponsors and donors that will build or donate extra rooms to be used for counselling, chronic management and even dispensing medication from the external pharmacy.

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7.4.2 District Department of Health HIV/AIDS and STI (HAS) Directorate

- Supply the PHC facilities with stationary and guidelines needed in the management of HIV.
- Arrange quarterly district feedback meeting to evaluate the implementation of guidelines and monitor progress on reduction of missing of appointments, LTFU, defaulters and other related factors that may affect the implementation of HIV services in facilities.
- Expand the training of TIER.Net system to all nursing staff so that they can retrieve vital information and capture the files, generate a list for clients due for follow up and those already missed in cases where the data capturer is not available or on leave.
- Quarterly profiling of the facilities not progressing well and arrange for a site visit. Form task team comprised of various sectors such as pharmacists, social workers, operational managers, local area managers, sub-district managers, HAS coordinator (if available) and other assistant directors and deputy directors of other fields that have an impact on HIV services.
- Communicate with the provincial DoH to motivate for a network system that will detect where the client registers and track the movements of clients to reduce the multi-collection of treatments.

7.4.3 Health Facility Staff Members

- Operational manager in charge of the facility to ensure that the skill audit updates quarterly. Where there are training gaps, the operational manager to write a motivation to consider the staff in the facility for the next available training session and state which instruction is most needed.
- Draw a quarterly in-service training plan to be communicated to all health care providers including non-government staff members such as CHWs and Lay counsellors.
- Plan a monthly feedback meeting with the CHWs and staff members to communicate the achievements and challenges and assess the referral system and linkage to care.
- Quarterly meeting with the community stakeholders for up-to-date training, feedback, and challenges should be organised.
- Operational manager of the facility in charge should monitor the implementation of the booking system so that it minimises the long waiting hours that result in client

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dissatisfaction. Moreover, the booking register should always be available in the facility.

- Educate the clients on how to reschedule the appointment if needs be.

7.4.4 Community Health Workers

- CHWs should coordinate, monitor, support and supervise closely the clients in the community more especially those who have challenges on appointment adherence.
- CHWs should provide continuous counselling and teaching to family members and clients when they go for support visits. They should address the clients and family's concern, and where it is beyond their scope of practice, arrangement and appointment made with the clinic staff members.
- CHWs should create the weekly profile of the clients expected for clinic visits and prioritise them for the support visit as a reminder. This also facilitates the need for rescheduling or where there is a need for the CHWs to collect medication for those clients in time.

7.4.5 ART clients

- Clients should be encouraged to verbalise their concerns and requests during clinic visits so that alternatives or other arrangements can be considered to maintain adherence to appointments and treatment.
- Encourage clients to involve their family members so that in cases where they are not available, family members can collect the medication on their behalf.
- Clients should be provided with access to select the appointment date suitable for his/her daily schedule, and their responsibility to keep to the chosen date emphasised.

7.4.6 Policy Maker

- To involve HIV/AIDS and STI (HAS) directorates in the development of policies that will facilitate legal accessing of health services by migrant people.

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7.4.7 Recommendation Based on the Developed Strategy

The researcher recommends that all stakeholders directly involved with the implementation of HIV services should be trained on the developed strategy so that they can monitor and evaluate the implantation and progress.

7.4.8 Recommendations for Further Research

The purpose of this study was to develop the strategy to reduce missing of appointments among ART clients in the Limpopo Province. The focus of this study was to improve adherence from all angles, thereby improving client retention in care, improve quality of life and prolong first-line regimen which is cost effective to the government.

- This research was primarily limited to CHCs; the recommendation for further research may include a study involving multiple sites such as clinics and hospitals because they are also involved in the management of ART clients. There is also a need to explore whether age, gender and educational status affect adherence to the appointments.
- This study indicated one barrier for adherence to appointments as the use of traditional medications and religious practices; further research is recommended to investigate the perception and knowledge about the HIV condition by traditional healers and faith-based leaders.
- Lastly, there is a need to develop the strategy that will facilitate client involvement during adherence sessions and a model to minimise missing of appointments by any chronic clients in care.

7.5 SUMMARY OF THE STUDY

The present study aimed to develop a strategy to reduce the missing of appointments by ART clients. The aim and objectives were achieved, therefore, in conclusion, the findings were those that guided the developed strategy. The findings, strategy and recommendations in this study should serve to improve the barriers contributing to the missing of appointments. The strategy developed in this study will also be a guiding tool to improve retention of clients in care, to decrease LTFU and treatment interruption.

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In conclusion, the strategy was validated, and recommendations made during the presentation and discussed with relevant individuals. Consequently, the strategy can be adopted by the Provincial Health Department and passed on to the District Health Department and Sub-District facilities for their implementation.

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ANNEXURE A1: CONSENT FORM FOR HIV-POSITIVE CLIENTS ON ART

I, **MYGIRL PEARL LOWANE**, a registered post-graduate student in the Department of Public Health, School of Health Science, and University of Venda am conducting a study to develop strategy for reducing the missing of appointments among adults on Anti-Retroviral Therapy in Limpopo Province.

The objectives of the study will be to determine clients' behaviour that contributes to missing appointments by HIV- positive clients in Limpopo Province, to determine the socio-environmental factors that contribute to missing appointments by HIV-positive clients in Limpopo Province and to develop strategies for enhancing compliance to appointments by HIV-positive clients in Limpopo Province.

During the study you will be interviewed individually at the place of your choice. However, the researcher will assess if the place is concussive and it does not pose any threats or harm. In case where the researcher fined the place unacceptable, an alternative arrangement will be made. Personal documents or clinical documents will not be required during the interview. Field notes and tape record will be used during the interview process. Few questions that are relevant to the study will be asked during the interview. You will not be forced to respond to the question that you do not feel comfortable. However, in this case, inform the researcher about your feeling. You are also allowed to withdraw any time during the process without penalty if you are not comfortable.

The information obtained from you during the interview will be treated confidentially and will not affect your right to be a client and you will not be refused to access the health care services. The recorded voices and field notes will be kept in a safe place, where only the researcher, supervisors and language editor will have access them. Your feelings, name and dignity will be preserved throughout the research process. You are no under obligation to sign this consent form. However, only participant who have signed will participate in this study. Your participation is voluntary. Please note that no payment will be paid by or to you.

A research summary will be available to the University of Venda library, Primary Health Care Centre manager of Department of Health at Provincial, District and Sub-District level.

Researcher's signature: _____ Date: _____

Participant

I_____, hereby consent to participate in the research study. I understand that my participation is voluntary and that I am free to withdraw from the study should I want to do so at any time of the study without any repercussions. The conditions of this study have been fully explained to me and I understand the circumstances of my participation.

Signature of the participant: _____ Date:_____

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ANNEXURE A2: CONSENT FORM FOR PROFESSIONAL NURSES

I, **MYGIRL PEARL LOWANE**, a registered post-graduate student in the Department of Public Health, School of Health Science, and University of Venda am conducting a study to develop strategy for reducing the missing of appointments among adults on Anti-Retroviral Therapy in Limpopo Province.

The objectives of the study will be to determine clients' behaviour that contributes to missing appointments by HIV- positive clients in Limpopo Province, to determine the socio-environmental factors that contribute to missing appointments by HIV-positive clients in Limpopo Province and to develop strategies for enhancing compliance to appointments by HIV-positive clients in Limpopo Province.

The researcher will interview you individually at the place of your choice after work or if you are not on duty. However, the place should be private and concussive for interview. You will not allow to consult other colleagues or refer to the guides during interview and you will also not to share the discussion with any person after you have been interviewed. Personal documents or clinical documents will not be required during the interview. Clients' names should not be mentioned during the interview. Field notes and tape record will be used during the interview process and only the researcher will be allowed to record. Few questions that are relevant to the study will be asked during the interview. You will not be forced to respond to the question that you do not feel comfortable. However, in this case inform the researcher about your feeling. You are also allowed to withdraw any time during the process if you are not comfortable.

The information obtained from you during the interview will be treated confidentially and will not affect you or your post/position. The recorded voices and field notes will be kept in a safe place, where only the researcher, supervisors and language editor will have access them. Your feelings, name and dignity will be preserved throughout the research process. You are no under obligation to sign this consent form. However, only participant who have signed will participate in this study. This consent form will not be linked with the information recorded it will be filed separately.

Your participation is voluntary, and you are allowed to withdraw from the study if you are not satisfied without being penalized. Please note that no payment will be paid by or to you.

A research summary will be available to the University of Venda library, Department of Health at Provincial, District and Sub-District level.

Researcher's signature: _____ Date: _____

Participant: I_____, hereby consent to participate in the research study. I understand that my participation is voluntary and that I am free to withdraw from the study should I want to do so at any time of the study without any repercussions. The conditions of this study have been fully explained to me and I understand the circumstances of my participation.

Signature of the participant: _____ Date:_____

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ANNEXURE A3: CONSENT FORM FOR COMMUNITY CARE GIVERS

I, **MYGIRL PEARL LOWANE**, a registered post-graduate student in the Department of Public Health, School of Health Science, and University of Venda am conducting a study to develop strategy for reducing the missing of appointments among adults on Anti-Retroviral Therapy in Limpopo Province.

The objectives of the study will be to determine clients' behaviour that contributes to missing appointments by HIV- positive clients in Limpopo Province, to determine the socio-environmental factors that contribute to missing appointments by HIV-positive clients in Limpopo Province and to develop strategies for enhancing compliance to appointments by HIV-positive clients in Limpopo Province.

Focus group discussion (FGD) will be conducted in this study. The group will be consisted of five to ten people of the same or different organisation. You will be requested to consent individually to be part of the group. Group discussion will be done in a private place at the facility where you are attached. Few questions will be posed for the group to share their views, experiences and feelings and you therefore requested to respect other inputs. Organisational and client's documents will not be required during the FGD. Field notes and tape record will be used during the discussion process. Information gathered will not be linked to any person or the organisation. You will not discuss the study with any other person after the focus group discussions. Whatever discussed during the FGD should be treated in a confidential manner. You will not be forced to respond to the question that you do not feel comfortable. However, in this case inform the researcher about your feeling.

The information obtained from you during the FGD will be treated confidentially and will not affect you or your post/position in your organisation. The recorded voices and field notes will be kept in a safe place, where only the researcher, supervisors and language editor will have access them. Your feelings, name and dignity will be preserved throughout the research process. You are no under obligation to sign this consent form. However, only participant who have signed will participate in this study. The consent form will be filed separately with the information recorded.

Your participation is voluntary, and you are allowed to withdraw from the study if you are not satisfied without being penalized. Please note that no payment will be paid by or to you. A research summary will be available to the University of Venda library, Primary Health Care Centre manager of Department of Health at Provincial, District and Sub-District level.

Researcher's signature: _____ Date: _____

Participant: I_____, hereby consent to participate in the research study. I understand that my participation is voluntary and that I am free to withdraw from the study should I want to do so at any time of the study without any repercussions. The conditions of this study have been fully explained to me and I understand the circumstances of my participation.

Signature of the participant: _____ Date:_____

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ANNEXURE B: ETHICAL CLEARENCE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms MP Lowane

Student No:
11627068

PROJECT TITLE: **Strategy for reducing the missing of appointments among adults on Anti-Retroviral Therapy in Limpopo Province in South Africa.**

PROJECT NO: **SHS/17/PH/13/1608**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Prof RT Lebese	University of Venda	Promoter
Prof AK Tugli	University of Venda	Co-Promoter
Ms MP Lowane	University of Venda	Investigator – Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: August 2017
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Prof. G.E. Ekosse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2017 -08- 21
Private Bag X5050
Thohoyandou 0950

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950, LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE (015) 962 8504/8313 FAX (015) 962 9060
"A quality driven financially sustainable, rural-based Comprehensive University"

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ANNEXURE C1: LETTER TO THE PROVINCIAL DEPARTMENT OF HEALTH: LIMPOPO PROVINCE

P. O Box 643
Letaba
0870

The Head of Department
Department of Health
P/ Bag 9302
Polokwane
0700

DEAR SIR/MADAM

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I **MYGIRL PEARL LOWANE**, a registered Doctor of Philosophy, Public Health (PHD), student in the Department of Public Health, University of Venda, would like to request permission to undertake a study to develop strategies for reducing the missing of appointments among adults on Anti-Retroviral Therapy at Limpopo Province particularly, in Vhembe, Capricorn and Mopani districts.

The aim of this study is to develop strategies that will assist in reducing the missing of appointments among adults on Anti-Retroviral Therapy. This study will benefit the province as the strategies developed in this study will help to decreasing missing of appointments by clients on ART. It will also reduce lost-to-follow-up, minimised defaulters, clients switched from first line regimen to second line regimen, which is difficult to treat, which have high financial implications. Finally, it will reduce treatment interruption and the chances of developing opportunistic infections and death rates due to AIDS defining illnesses. Participation in this study will be voluntary and anonymity of participants will be maintained.

Yours faithfully

Lowane MP (contact no: 0729175359/ 0744883601)

Signed_____at_____on___/___2017

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Creating Future Leaders

ANNEXURE C2: LETTER FROM LIMPOPO PROVINCE DEPARTMENT OF HEALTH

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Stols M.L (015 293 6169)

Ref:4/2/2

Lowane MP (LP2017 09 013)
PO Box 643
Letaba
0870

Greetings,

RE: Strategies for Reducing Missing of Appointments among Adults on Anti-Retroviral Therapy in Limpopo Province, South Africa

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher.
   - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager.
   - In the course of your study there should be no action that disrupts the services.
   - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - The above approval is valid for a 3 year period.
   - If the proposal has been amended, a new approval should be sought from the Department of Health.
   - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

Head of Department

12/10/2017
Date

18 College Street, Polokwane, 0700, Private Bag x9302, POLOKWANE, 0700
Tel: (015) 293 6000, Fax: (015) 293 6211/20 Website: http/www.limpopo.gov.za

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ANNEXURE D1: LETTER FOR PERMISSION TO MOPANI DISTRICT

P. O Box 643
Letaba
0870

Mopani District Executive Manager
Department of Health
P/ Bag X 9687
Giyani
0826

DEAR SIR/MADAM

REQUEST FOR PERMISSION TO CONDUCT RESEARCH STUDY

I **MYGIRL PEARL LOWANE**, a registered Doctor of Philosophy, Public Health (PHD), student in the Department of Public Health, University of Venda, would like to request permission to undertake a study to develop strategies for reducing the missing of appointments among adults on Anti-Retroviral Therapy at Limpopo Province particularly, in Vhembe, Capricorn and Mopani districts.

The aim of this study is to develop strategies that will assist in reducing the missing of appointments among adults on Anti-Retroviral Therapy. This study will benefit the province as the strategies developed in this study will help to decreasing missing of appointments by clients on ART. It will also reduce lost-to-follow-up, minimised defaulters, clients switched from first line regimen to second line regimen, which is difficult to treat, which have high financial implications. Finally, it will reduce treatment interruption and the chances of developing opportunistic infections and death rates due to AIDS defining illnesses. Participation in this study will be voluntary and anonymity of participants will be maintained.

Yours faithfully

Lowane MP (contact no: 0729175359/ 0744883601)

Signed_____at_____on___/___2017

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ANNEXURE D2: LETTER FROM MOPANI DISTRICT

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
MOPANI DISTRICT

Ref: S4/2/2
Enq: Mohatli IE
Tel: 015 811 6543

To **Lowane MP**
PO Box 643
Letaba
0870

Re: PERMISSION TO CONDUCT RESEARCH IN MOPANI HEALTH FACILITIES: YOURSELF

1. The matter cited above bears reference
2. This serves to respond to the request submitted to research on the topic: **"Strategies of reducing missing of appointments among adults on Anti-Retroviral Therapy in Limpopo Province."**
3. It is with pleasure to inform you about the decision to permit you to conduct research in the PHC facilities within Mopani District.
4. You will be required to furnish PHC authorities with this letter for purposes of access and assistance.
5. You are further advised to observe ethical standards necessary to keep the integrity of the facilities.
6. The Mopani District wishes you well in your endeavour to generate knowledge.

Director: Corporate Services
Date: 2017/11/03

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ANNEXURE E1: LETTER FOR PERMISSION TO CAPRICORN DISTRICT

P. O Box 643
Letaba
0870

Capricorn District Executive Manager
Department of Health
Molman Building 34 Hans Van Rensburg Street.
Polokwane
0699

DEAR SIR/MADAM

REQUEST FOR PERMISSION TO CONDUCT RESEARCH STUDY

I **MYGIRL PEARL LOWANE**, a registered Doctor of Philosophy, Public Health (PHD), student in the Department of Public Health, University of Venda, would like to request permission to undertake a study to develop strategies for reducing the missing of appointments among adults on Anti-Retroviral Therapy at Limpopo Province particularly, in Vhembe, Capricorn, Waterberg, Sekhukhune and Mopani districts CHCs.

The aim of this study is to develop strategies that will assist in reducing the missing of appointments among adults on Anti-Retroviral Therapy. This study will benefit the province as the strategies developed in this study will help to decreasing missing of appointments by clients on ART. It will also reduce lost-to-follow-up, minimised defaulters, clients switched from first line regimen to second line regimen, which is difficult to treat, which have high financial implications. Finally, it will reduce treatment interruption and the chances of developing opportunistic infections and death rates due to AIDS defining illnesses. Participation in this study will be voluntary and anonymity of participants will be maintained.

Yours faithfully

Lowane MP (contact no: 0729175359/ 0744883601)

Signed_____at_____on___/___2017

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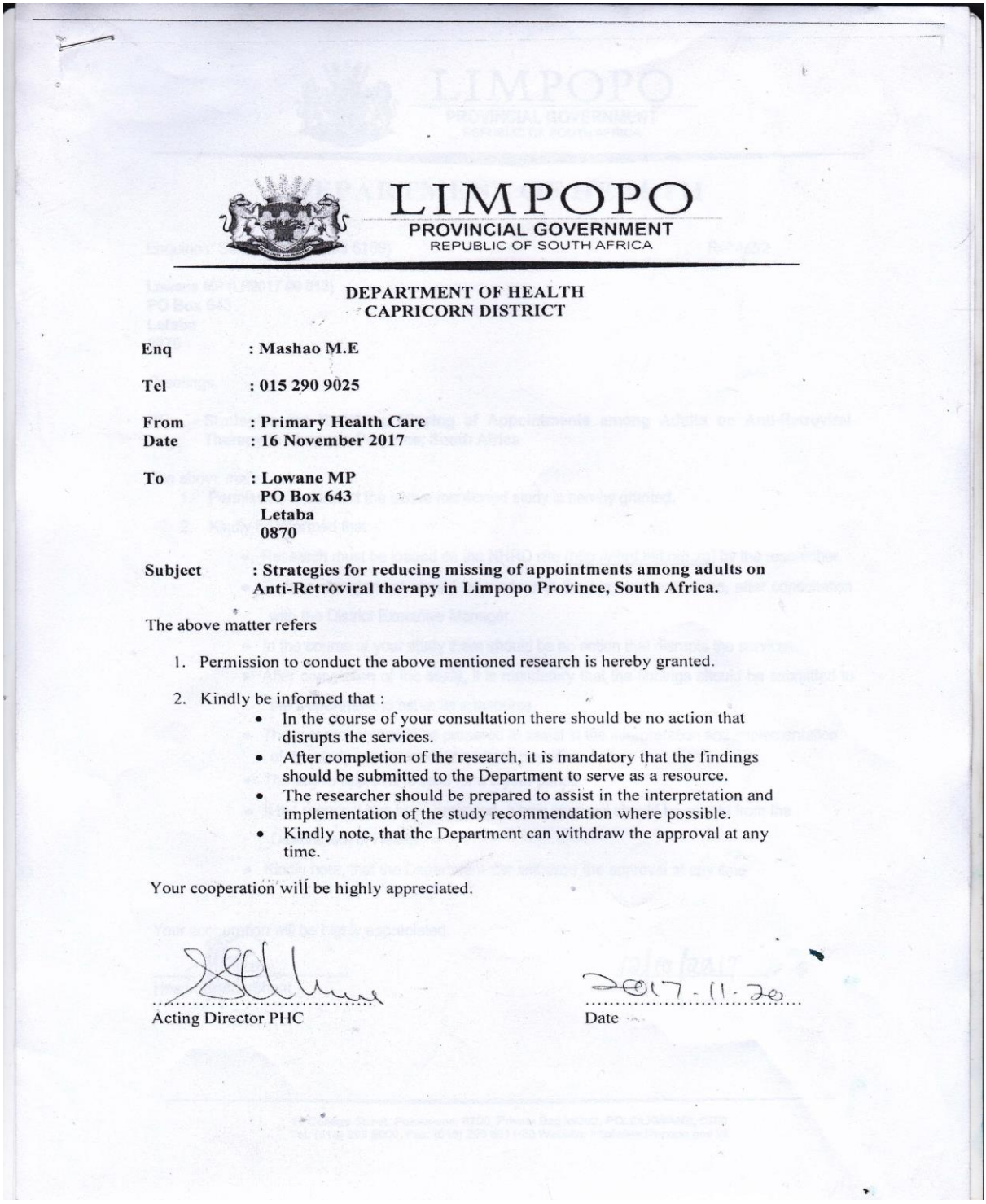
ANNEXURE E2: LETTER FROM CAPRICORN DISTRICT



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
CAPRICORN DISTRICT

Enq : **Mashao M.E**

Tel : **015 290 9025**

From : **Primary Health Care**
Date : **16 November 2017**

To : **Lowane MP**
PO Box 643
Letaba
0870

Subject : **Strategies for reducing missing of appointments among adults on Anti-Retroviral therapy in Limpopo Province, South Africa.**

The above matter refers

1. Permission to conduct the above mentioned research is hereby granted.
2. Kindly be informed that :
   - In the course of your consultation there should be no action that disrupts the services.
   - After completion of the research, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

Acting Director PHC

2017-11-20
Date

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ANNEXURE F1: LETTER FOR PERMISSION TO VHEMBE DISTRICT

P. O Box 643
Letaba
0870

Vhembe District Executive Manager
Department of Health Vhembe District Office
Government Building
Thohoyandou
0950

DEAR SIR/MADAM

REQUEST FOR PERMISSION TO CONDUCT RESEARCH STUDY

I **MYGIRL PEARL LOWANE**, a registered Doctor of Philosophy, Public Health (PHD), student in the Department of Public Health, University of Venda, would like to request permission to undertake a study to develop strategies for reducing the missing of appointments among adults on Anti-Retroviral Therapy at Limpopo Province particularly, in Vhembe, Capricorn, Waterberg, Sekhukhune and Mopani districts CHCs.

The aim of this study is to develop strategies that will assist in reducing the missing of appointments among adults on Anti-Retroviral Therapy. This study will benefit the province as the strategies developed in this study will help to decreasing missing of appointments by clients on ART. It will also reduce lost-to-follow-up, minimised defaulters, clients switched from first line regimen to second line regimen, which is difficult to treat, which have high financial implications. Finally, it will reduce treatment interruption and the chances of developing opportunistic infections and death rates due to AIDS defining illnesses. Participation in this study will be voluntary and anonymity of participants will be maintained.

Yours faithfully

Lowane MP (contact no: 0729175359/ 0744883601)

Signed_____at_____on___/___2017

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ANNEXURE F2: LETTER FROM VHEMBE DISTRICT

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OFHEALTH
VHEMBE DISTRICT

Ref: S5/6
Enq: Muvari MME
Date: 24 October 2017

Dear Lowani M.P

PERMISSION TO CONDUCT A RESEARCH ON THE "Strategies for reducing missing of appointments among adults on Anti-retroviral Therapy in Limpopo Province, South Africa"

1. The above matter refers.

2. Your letter received on the 24 October 2017 requesting for Permission to conduct an investigation is hereby acknowledged.

3. The District has no objection to your request.

4. Permission is therefore granted for the study to be conducted within Vhembe District.

5. You are however advised to make the necessary arrangements with the facilities concerned.

Wishing you success in your endeavors.

..... 25/10/2017
DISTRICT CHIEF DIRECTOR DATE

Private Bag X5009 THOHOYANDOU 0950
OLD parliamentary Building Tel (015) 962 1000 (Health) (015) 962 4958 (Social Dev) Fax (015) 962 2274/4623
Old Parliamentary Building Tel: (015) 962 1848, (015) 962 1852, (015) 962 1754, (015) 962 1001/2/3/4/5/6 Fax (015) 962 2373, (015) 962 227

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ANNEXURE G1: LETTER FOR PERMISSION TO WATERBERG DISTRICT

P. O Box 643
Letaba
0870

Waterberg District Executive Manager
Department of Health Waterberg District Office

DEAR SIR/MADAM

REQUEST FOR PERMISSION TO CONDUCT RESEARCH STUDY

I **MYGIRL PEARL LOWANE**, a registered Doctor of Philosophy, Public Health (PHD), student in the Department of Public Health, University of Venda, would like to request permission to undertake a study to develop strategies for reducing the missing of appointments among adults on Anti-Retroviral Therapy at Limpopo Province particularly, in Vhembe, Capricorn, Waterberg, Sekhukhune and Mopani districts CHCs.

The aim of this study is to develop strategies that will assist in reducing the missing of appointments among adults on Anti-Retroviral Therapy. This study will benefit the province as the strategies developed in this study will help to decreasing missing of appointments by clients on ART. It will also reduce lost-to-follow-up, minimised defaulters, clients switched from first line regimen to second line regimen, which is difficult to treat, which have high financial implications. Finally, it will reduce treatment interruption and the chances of developing opportunistic infections and death rates due to AIDS defining illnesses. Participation in this study will be voluntary and anonymity of participants will be maintained.

Yours faithfully

Lowane MP (contact no: 0729175359/ 0744883601)

Signed_____at_____on___/___2017

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ANNEXURE G2: LETTER FROM WATERBERG DISTRICT

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
WATERBERG DISTRICT

REF: 4/3/3
ENQ: NKGODI D.R (PA TO THE DISTRICT EXECUTIVE MANAGER)
DATE: 25/10/2017

TO: LOWANE M.P
P.O BOX 643
LETABA
0870

RE: PERMISSION TO CONDUCT RESEARCH: YOURSELF.

The above bear's reference:-

1. The office of the Acting District Executive Manager, hereby confirms receipt of your request to conduct research on strategies for reducing missing of appointments among adults on Anti-Retroviral therapy in Limpopo Province, South Africa.
2. Permission is hereby granted as per approval by the HOD.
3. You are further requested to notify this office on when you are going to start with the research and make sure that there is no action that disturbs service delivery.

Your support and cooperation in terms of the above will be highly appreciated.

ACTING DISTRICT EXECUTIVE MANAGER
WATERBERG DISTRICT

2017/10/25
DATE

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ANNEXURE H1: LETTER FOR PERMISSION TO SEKHUKHUNE DISTRICT

P. O Box 643
Letaba
0870

Sekhukhune District Executive Manager
Department of Health Sekhukhune District Office

DEAR SIR/MADAM

REQUEST FOR PERMISSION TO CONDUCT RESEARCH STUDY

I **MYGIRL PEARL LOWANE**, a registered Doctor of Philosophy, Public Health (PHD), student in the Department of Public Health, University of Venda, would like to request permission to undertake a study to develop strategies for reducing the missing of appointments among adults on Anti-Retroviral Therapy at Limpopo Province particularly, in Vhembe, Capricorn, Waterberg, Sekhukhune and Mopani districts CHCs.

The aim of this study is to develop strategies that will assist in reducing the missing of appointments among adults on Anti-Retroviral Therapy. This study will benefit the province as the strategies developed in this study will help to decreasing missing of appointments by clients on ART. It will also reduce lost-to-follow-up, minimised defaulters, clients switched from first line regimen to second line regimen, which is difficult to treat, which have high financial implications. Finally, it will reduce treatment interruption and the chances of developing opportunistic infections and death rates due to AIDS defining illnesses. Participation in this study will be voluntary and anonymity of participants will be maintained.

Yours faithfully

Lowane MP (contact no: 0729175359/ 0744883601)

Signed_____at_____on___/___2017

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ANNEXURE H2: LETTER FROM SEKHUKHUNE DISTRICT

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
SEKHUKHUNE DISTRICT

Ref: 5/3/1
Enq: Mashiane PN
Tel: 0156332352 / 078 126 5414
E-mail: Philistus.Mashianc@dhsd.limpopo.gov.za

Date: 31 October 2017

To: Chief Executive Officer: St Ritas and Philadelphia Hospital

From: Human Resource Utilization and Capacity Development.

Subject: Approval to conduct research and permission to collect data: Ms Lowana MP

1. The above matter bears reference.
2. The Head of Department of Health, Limpopo Province has approved a request to conduct research in respect of Ms Lowana MP and therefore the District Executive Manager for Sekhukhune District has permitted the applicant to visit the institutions and facilities which she has specified in her individual application letter where data will be collected.
3. Please take note that the approval for the research is valid for a period of 3 years. Be informed that the collected findings from your facilities and institutions will be kept confidential and also will not be made available for public use by the researcher.
4. During assumption of data collection, Ms Lowana will present herself, her scope of work and schedule on how she will conduct herself to the Sub-District Manager of the facility and the Chief Executive Officer of the hospital (above-mentioned) she intends to visit.
5. I hope the matter is found to be clear and understandable.

27/11/2017

District Executive Manager
Mrs Maepa M

Date

Private Bag X04, Chuenespoort 0745 Tel: (015) 633 2300, Fax: (015) 6336487,Website:www.limpopo.gov.za

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ANNEXURE I1: INTERVIEW GUIDE FOR ART CLIENTS

Demographic profile

client NO:													
Clients Gender		**age in years**		**Relationship status**		**Level of education**		**Employment status**		**Religion**	
male		18–49 years		Single		Never attended school		Employed		Christians	
female		50 years of age and older		Cohabiting		Attended primary school		Unemployed		No religion	
						Reached and never passed grade 12		Employed			
						Passed grade 12					
				Married		Progressed after grade 12					

Main Question: What are the behavioural, socio-environmental and health service-related factors contribute to missing of appointments?

Probing questions:

- Can you explain the information that you have being offered during adherence counselling process and when you are initiated on ART?
- If you did not return to the clinic on the given return date, how long it takes you to go to the clinic again and what were you taking at the mean time?
- It is noted from your clinical record that you do not adhere to schedule appointments, can we discuss what are the challenges in terms of coming to clinic in the date given?
- Is there anything you would like to suggest that will assist you to adhere to the scheduled clinic visits or any other alternatives to address your challenges?

_____

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ANNEXURE I2: INTERVIEW GUIDE FOR PROFESSIONAL NURSES

Demographic profile

Items		**PN NO:**			
Gender		Male			
		Female			
Age in years		20–25	26–35	36–49	Above 50
Years of employment in the current post		0-5yrs	6–10yrs	11–19yrs	20+yrs
Level of education	Only a nursing diploma				
	Postgraduates nursing diplomas				
	Nursing degrees				
	Master's degree in health sciences				
HIV management training/programmes	Comprehensive care management and treatment support of HIV-positive clients (CCMT)				
	Advanced clinical care of HIV-positive clients				
	Adherence counselling				
	Integrated access to care and treatment (I-ACT)				

Main questions: What are your perceived clients' behavioural and socio-environmental factors contribute to missing of appointments and what is the health service-related factors contributing to missing of appointment by ART clients?

Probing questions:

- What information or education is given to the clients during adherence counselling?
- Do you think the information or education given to them motivate them to take full responsible of their condition?
- Which behaviours have you noted that mostly inhibits the HIV- Positive clients to miss their scheduled appointments and what are the most reasons the clients are giving when they have missed the appointments?
- In your opinion, do you think the provider-related issues, working environment, Health System-related quality-of care issues and client experiences of anti-retroviral treatment services can be the result of the missing of appointments by clients? Substantiate your views.
- What suggestions will you suggest that will assist in reduction of the missing of appointments by ART clients?

_____

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ANNEXURE I3: INTERVIEW GUIDE FOR COMMUNITY HEALTH WORKERS

Demographic profile

Items	FGD NO:			
Gender	Males			
	Females			
Age (in years)	18–24yrs	25–35	35–49yrs	Above 50 years
Number of years' experience in current organisation	0–5	6–10	11–19	Above 20
Level of education	Never attended school			
	Only primary level education			
	Grade 12 (matric)			
	Post-grade 12 qualifications			
Training status	Received training on comprehensive care management and treatment support of HIV-positive clients			
	Received training on adherence counselling			
	Received training on community home-based care			
	Never received training on community home-based care but had received in-service training			

Main questions: What are your perceived clients' behavioural and socio-environmental factors contribute to missing of appointments and what are the health service-related factors contributing to missing of appointment by ART clients?

Probing questions:

- Can you briefly explain how is the clients linked to your care?
- Dealing with HIV-positive clients is challenging because of the issues of disclosure and stigma around it, how is you working relationship with them?
- What challenges do you come across when supporting HIV- positive clients in the community?
- Which behaviours have you noted that mostly inhibits the HIV- Positive clients to miss their scheduled appointments?
- When visiting them what most reasons are given by them not to go to the clinic as scheduled?
- From your observation, do you think factors such as poverty, distance, cultural believes, other alternative to care and lack of family support contributes to the missing of appointments by these clients?
- Is there anything that can be done to the clients to improve the missing of the appointments?

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ANNEXURE J1 LETTER FROM LANGUAGE TRANSLATOR (SEPEDI)

Confirmation by Language Translator

Dr Maake M.A (Doctor of Philosophy in Nursing Science)

Contacts: 015 293 6585

Cell : 072 468 5699/

Email: mphele.maake@dhsd.limpopo.gov.za

27 August 2018

To whom it may concern

This is to serve that I have translated the Sepedi (North Sotho) language from the participants interviews listening to audio tape recorder to English language of the PHD thesis by Lowane Mygirl Pearl. The title of the study is: **Strategy for reducing the missing of appointments among adults on anti-retroviral therapy in Limpopo Province, South Africa.** I personally typed the transcript.

Yours Sincerely

MMaake

Provincial Deputy Director: TB/HIV.

(Department of Health: Limpopo Province)

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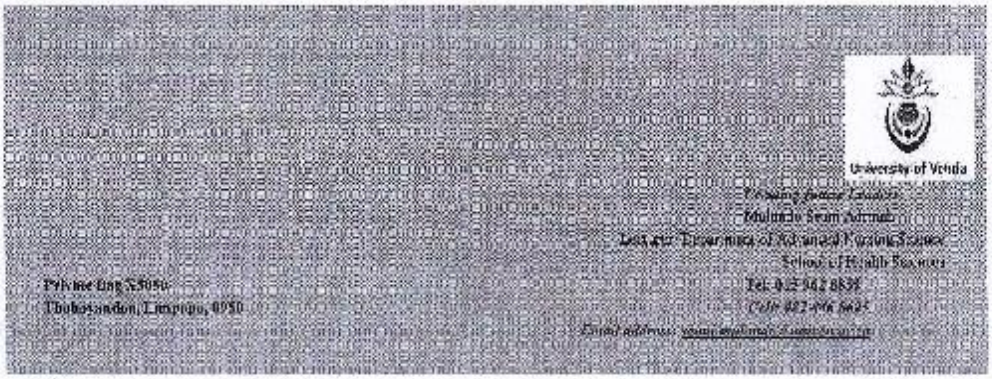
ANNEXURE J2 LETTER FROM LANGUAGE TRANSLATOR (VENDA)



12 August 2018

DECLARATION

To whom it may concern

This is to declare that I have translated the Tshivenda language from the participants' interviews listening to audio tape recorder to English for the PhD thesis by **Ms Lowane Mygirl Pearl**, entitled: "**Strategy for reducing the missing of appointments among adults on anti-retroviral therapy in Limpopo Province, South Africa**". The transcripts were typed by me.

To my knowledge they are correctly translated and free of language errors.

Yours faithfully

Mulondo.....

Dr SA Mulondo

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ANNEXURE H: Qualitative data analysis

Doctor of Philosophy in Public Health

For

Ms MP LOWANE

THIS IS TO CERTIFY THAT:

Professor Tebogo Maria Mothiba has co-coded the following qualitative data:

Unstructured one-to-one interviews

For the study:

STRATEGY FOR REDUCING THE MISSING OF APPOINTMENTS AMONG ADULTS ON ANTI-RETROVIRAL THERAPY IN LIMPOPO PROVINCE, SOUTH AFRICA

I declare that the candidate and I have reached consensus on the major themes reflected by the data during a consensus discussion meeting. I further declare that adequate data saturation was achieved as evidenced by repeating themes.

Prof TM Mothiba

TM Mothiba (PhD)

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ANNEXURE I: CONSENT FORM FOR STRATEGY VALIDATION

I, **MYGIRL PEARL LOWANE**, a registered post-graduate student in the Department of Public Health, School of Health Science, and University of Venda am conducting a study to develop strategy for reducing the missing of appointments among adults on Anti-Retroviral Therapy in Limpopo Province. The study may benefit the facilities to reduce the missing of appointment by ART clients and enhancing compliance by ART clients. Furthermore, this study might address the issue of lost to follow-up by clients. the study may also promote good relationship between clients and health care providers.

You are requested to participate in the validation of the strategy developed in this study. Your honest response is required because it will assist the researcher to identify if the study purpose has been met. A questionnaire will be used as an instrument to validate the strategy, where you are expected to complete it individually at your own time within seven days upon on receiving it.

The information obtained from the questionnaire will be treated confidentially and will not affect you or your post/position. You are no under obligation to sign this consent form. However, only participant who have signed will participate in this study. This consent form will not be linked with the information provided in the questionnaire and it will be filed separately.

Your participation is voluntary, and you are allowed to withdraw from the study if you are not satisfied without being penalized. Please note that no payment will be paid by or to you.

A research summary will be available to the University of Venda library, Department of Health at Provincial, District and Sub-District level.

Researcher's signature: _____ Date: _____

Participant: I_____, hereby consent to participate in the research study. I understand that my participation is voluntary and that I am free to withdraw from the study should I want to do so at any time of the study without any repercussions. The conditions of this study have been fully explained to me and I understand the circumstances of my participation.

Signature of the participant: _____ Date:_____

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ANNEXURE J: VALIDATION INSTRUMENT QUESTIONNAIRE

Developed strategy for reducing the missing of appointment among adults on ART

Instructions

Make one tick per item in appropriate box.
Comments should be written in the space provided.
Do not refer or discuss with any person your honest is required.
Respond to all data elements.

Section A demographic data in Limpopo Province: South Africa

Respondent code	e.g. R001									
Age										
Title of your post	Make a tick (one)									
Deputy director										
Assistant director										
Operational manager										
Seconded acting operational manager										
Years in the service in the current post										
Highest level of education	1. Diploma		2. Post graduate diploma		3.Degree		4.Masters		5.PHD	
Trainings or workshops trained (tick as many)	1.NIM-ART		2. Adherence counselling		3.CCMT		4.Disclosure Counselling		5. PICT	
	1 yes	2 no	1 yes	2 no	1 yes	2 no	1 yes	2 no	1 yes	2 no

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Section B Building on strengths

Objectives on Strengths	Validation strategy actions	Achievable	Not achievable	Comments
1. To strengthen the availability of human resources.	Motivate for extra counselling rooms to avoid rushing the queue.			
	Conduct Weekly meeting with CHWs for feedback, reports established to link the clients newly enrolled on ART.			
	Provision of mentoring sessions for CHWs and other staff members involved in the management of HIV+ clients.			
2. To capacitate human resources with the competency skill and knowledge.	Compile a training needs programme and communicate with Deputy Director for CCMT to arrange quarterly workshops to include all health care provers directly involved with management of HIV+ clients.			
	Advocate for the development standardised SOPs, checklist and algorithm that have the information that will guide the health care providers on step to follow and key information to discuss with the clients during ART initiation and during follow up visits.			
3.To promote good quality standard care.	Weekly Allocation of a person responsible for checking the availability of ARVs and request from the dispensing hospital when the stock saturation is below 50%.			
	Conduct the stock card audit and make correction for discrepancies on weekly basis			
	Request for additional guidelines for Professional nurses, lay counsellors and Community Health workers.			
4. To promote uninterrupted services delivery.	Regular update the clients utilising the facility about the services offered in the facility and the new development and changes.			
	Conduct the monthly meeting with the community stakeholders to enlighten them with the programmes offered in the facility.			
	Orientate the clients and the community stakeholders about universal test and treat (UTT) strategy to promote early seeking of treatment.			
	Orientate the clients about the three stream of IDEAL clinic to minimize confusion			
5. To promote adherence to medications and improve clinic attendance.	Provide medication to CHWs or family member for the clients who cannot reach the clinic for that period and record in a client's ART file			
	Seven days treatment always maintained to prevent treatment interruption			
	Provide the platform or a means for rescheduling the appointment by: ✓ Having a rebooking register ✓ Daily delegation of person responsible for recording the rescheduled appointment ✓ Providing the clients with facility number to call at least two day before the actual date or reschedule through CHWs			

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Overcoming the weaknesses

Objectives to overcome weaknesses	Validation strategy actions	Achievable	Not achievable	Comments
1. To expand the number of trained human resources.	Motivate for provider initiation counselling and testing (PICT) to be trained simultaneously with NIM-ART to increase the uptake of professional nurses who does not have entry point of PICT.			
2. To expand the number of CHWs to meet the coverage ratio.	Write a motivational letter to Advocacy community social mobilization Deputy Director to motivate for budget increase for the recruitment of CHWs according to client's ratio and distribution.			
3. To promote family involvement and support.	Contact family members of the clients who have challenges in missing appointments (Only who have disclosed).			
	Arrange for adherence session for both the family and the clients and develop a treatment plan that will involve the family support.			
4. To intensify the quality of NIM-ART training.	Motivate for the expansion of NIM-ART training content to incorporate Integrated Access to Care and Treatment (I-ACT) modules to empower the health providers with the skills that will empower the HIV+ clients on ART to cope with their condition.			
5. To promote client-provider relationship in order to improve communication.	Motivate for the training workshop with an expert to conduct on-site training in the field of client-provider relationships for all health care providers. • So that health providers will be equipped with skills for promoting conducive environment that will enhance client-Provider relationship.			
6. To maintain the availability of guidelines and other ART clinical stationary.	Request for the installation of the guidelines folder at the facility computer and back up in the Hard drive or memory stick.			
	Organise training and invite monitoring and evaluation manager to educate operational managers on how to download guidelines on their smart phones that does not require network to open. Operational Managers to teach the whole staff.			
	Write a request in a quarterly basis to Deputy Manager CCMT at the district to make procurement of ART clinical stationary including clients retained card and summary visits.			
	Weekly delegation of data capture to monitor the availability of ART clinical stationary levels and records in the stock book and communicate with operational manager every Friday about the stock level.			
7. To revive and strengthen booking System.	The operational manager should organise poor linkage to care on-site orientation of the policy of booking system.			
	Operational managers to make a request for booking register or Copy and bind the forms.			
	Calculation of the proportion of the clients to be booked for a day and communicated to the staff to avoid over or under booking.			

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	Exceptional slot for rebooking should always be open, and the facility decides on the additional number of clients rescheduled for these appointments.			
	Booking slot should be communicated to the clients so that they can choose which day or time is suitable for them.			
	CHWs given the dates that are open so that they can assist clients to reschedule the date while in the community.			
8 To reduce long waiting Hours and Long queues	Identify days in the week where there are enough PNs.			
	Allocation of two PNs where there are high numbers of clients booked for that day.			
	Booking of clients made according to services. For example, those who need blood collection or renewal of prescription.			
	Establish a fast lane where the clients with no challenges can collect treatment quickly without consultation.			
	Prepacked medication for clients on the fast lane and involve enrolled nurse to dispense.			
9. To establish reminder system that will enhance adherence to appointment.	Indicate which strategies can be Adopted for reminding the clients which can be applicable and feasible for the facility ● call them two to three days prior to ART visit or SMS.			
	● Teach the family members how to monitor adherence at home so that they will remind the client to go to the clinic for treatment refill.			
	● Write a return date visible in the medication container so that the client can be reminded about the date every day when taking medication.			
	● Explore with the patient on every visit the date that can be suitable for him/her so that it will be easy to remember, or it will not have challenges such as financial constraints or time off work.			
	● Motivate for modification of clients retained card with the Deputy Director to forward the input to the province responsible for procuring client-retained cards to be printed in the form of a calendar so that it is easy for clients to read and follow the dates.			
	Weekly generating of the list prior for ART visit to be given to CHWs every Monday to do physical reminder during home visits.			
10. To improve linkage to care and promote client's retention to ART	Quarterly in-service training both the facility staff and the CHWs about the down-referral policy should be motivated.			
	Operational manager to motivate for the availability of down referral forms and down-referral registers at the facility and CHWs organisations to compile the number of clients attached to which CHWs.			
	Conduct Weekly meeting with the CHWs to allocate clients that need treatment supporters and those assessed and anticipate that they might have challenges with adherence as a whole.			

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Exploring Opportunities

Objectives to strengthen opportunities	Validation Strategy Actions	Achievable	Not achievable	Comments
1. To provide standard quality of care and to adhere to the scope of practice	Organise quarterly training for both the clients, CHWs and PNs to develop positive attitudes toward the policies and guidelines through education, workshops and community mobilisation and community outreach.			
2. To enhance proper utilisation of the budget allocated for the facility.	Record the stock invoices whenever receiving the stock.			
	Assess the budget allocated and determine whether it is achievable to order extra medication to cater those need two- or three-months supply.			
3. To sustain information for Monitoring and evaluation.	Daily monitoring of the functionality of the computer and TIER.Net file and backup system to maintain the information.			
	Arrange with the expert from information management office to train all staff members to operate the TIER.Net system so that there is no backlog of data when Data capture is not available. Also, to access information for the clients in question for further management.			
4. To strengthen community engagement	Organise quarterly meetings with the community stakeholders such as traditional leaders, faith-based practitioners and local authorities to discuss the challenges faced by the facility in relation to management of clients on ART.			
	Organise bi-annually community dialogue or imbizo to address the modification of risky behaviour by HIV+ clients on ART, such as use of substances and alcohol.			
5. To promote adherence to ethical principles.	Encourage health care providers including the CHWs to maintain ethical principles, privacy and confidentiality to avoid involuntary or unintended disclosure of client's status.			
	Ethical principles should form part of adherence counselling to facilitate decision-making about the treatment plan.			

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Minimizing of Threats

Objectives to minimize threats	Validation Strategy Actions	Achievable	Not achievable	Comments
1. To promote control over migrant clients	Forward the input to the district about the development of policy the will control migrant clients.			
	Migrants who do not have a passport or work permit should be encouraged to bring the letter from traditional offices or ward counsellor during a clinic visit.			
2. To ensure continuous and uninterrupted service delivery	Community members should be engaged not to disrupt essential services during service delivery protest so that service should always be accessible.			
	Hold the meeting with the political leaders through clinical committee chairperson or the operational manager of the facility to address their community.			
3. To promote understanding of HIV condition at the workplace	Request that the Assistant Director HIV testing services to consider the distribution of stigma and discrimination policy in farmers, mines or other private sectors.			
	Organise the Labour Department to provide in-service training/ workshop for employers annually.			
4. To incapacitate traditional Authorities and religious Authorities about HIV management.	Request the Assistant Director ACSM communicate with Resource Training Centre (RTC) to organise training for traditional leaders and religious faith-based leaders to be workshopped about HIV so that they can further advise clients on the correct use of their medications.			
5. To promote consistent treatment supply to clients affected by distance and transport. 6. To assess satisfaction about the HIV Management service provision.	Each local area to identify stable clients that are staying far and have challenge with transport and prepacked their medications for delivery as follows: • Identify a place such as church or school or office of NGOs and do a partnership to deliver treatment for the clients a day before using mobile services			
	Three months' supply should be considered for clients living far away from the facility.			
	Request the standardised clients' satisfaction tool to be conducted quarterly concerning HIV management in the clinic and community.			
	Discuss the comments given by clients at the staff meeting, and the report filed in the facility satisfaction survey			

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ANNEXURE H: DECLARATION OF PROFESSIONAL EDIT

Marion Pfeiffer
11 Heron Way
Eastford Glen
Knysna 6571
Tel: 083 590 6762
imarion100@gmail.com

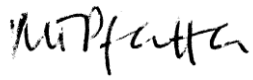
25 April 2019

DECLARATION OF PROFESSIONAL EDIT

STRATEGY FOR REDUCING THE MISSING OF APPOINTMENTS AMONG ADULTS ON ANTI-RETROVIRAL THERAPY IN LIMPOPO PROVINCE, SOUTH AFRICA

I declare that I have edited and proofread this document. My involvement was restricted to language usage and spelling, completeness and consistency, referencing style and formatting of headings, captions and Tables of Contents. I did no structural re-writing of the content.

Sincerely,



Marion Pfeiffer

Freelance Copy-editor and Proof reader
Intermediate Member, SfEP UK
Full member, Professional Editors Group and SAFREA

Professional EDITORS Group

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