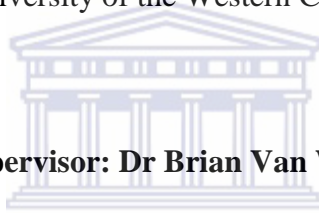**UNIVERSITY OF THE WESTERN CAPE**

Faculty of Community and Health Services

FACTORS ASSOCIATED WITH POOR ADHERENCE AMONGST PATIENTS RECEIVING ANTIRETROVIRAL THERAPY AT THE INTERMEDIATE HOSPITAL OSHAKATI IN NAMIBIA

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A mini-thesis submitted in partial fulfillment of the requirements for the degree of Master's in Public Heath, in the School of Public Health, Faculty of Community and Health Sciences, , University of the Western Cape.

Supervisor: Dr Brian Van Wyk

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Keywords

Adherence

Antiretroviral therapy

Compliance

HIV

AIDS

Medication

Poor adherence

Patients

Treatment

Experience

Abbreviations

AIDS	Acquired immunodeficiency syndrome
ARV	Antiretroviral
ART	Antiretroviral therapy
BLT	Behavioral learning theory
CDC	Communicable disease clinic
DOT	Directly observed therapy
HAART	Highly active antiretroviral therapy
HCP	Health care provider
HIV	Human immunodeficiency virus
HIS	Health information system
IHO	Intermediate Hospital Oshakati
MOHSS	Ministry of Health and Social Services
TB	Tuberculosis
TRA	Theory of reasoned action
TPB	Theory of planned behaviour
WHO	World Health Organization
UNAIDS	United Nations Programme on HIV/AIDS
USA	United States of America
UNICEF	United Nations Children Fund
NKI	Nurse Key informant
DKI…………….Doctor key informant
CCKI…………...Community Counselor key informant
PAKI	Pharmacist Assistant key informant

Abstract

Namibia is severely affected by the HIV/AIDS epidemic, with an estimated HIV prevalence of 17.8%. A comprehensive, public HIV/AIDS treatment and care programme was established in 2003 by the government of Namibia in association with its development partners. The introduction of antiretroviral therapy [ART] has dramatically decreased HIV-related mortality and morbidity, improved quality of life, revitalized communities and transformed perceptions of HIV/AIDS from a plaque and death sentence to a manageable chronic condition. Intermediate Hospital Oshakati (IHO) in the Oshana region, is one of the six pilot hospitals where highly antiretroviral therapy (HAART) was initiated.

Adherence to antiretroviral therapy (ART) is a key factor in ensuring optimal clinical outcomes and is associated with improved survival among HIV and AIDS patients. Sustained high levels of adherence (taking 95% or more of medication as prescribed) are essential for treatment success. Suboptimal adherence to treatment has been associated with virologic, immunologic and clinical failure, and may increase the risk of resistance to first-line ART drugs.

Studies conducted in various parts of the country including the Oshakati district, report small proportions of patients defaulting on ART. Defaulting from treatment raises questions about adherence to ART as it can be assumed that poor adherence would precede defaulting from treatment. This study explored factors that influence poor adherence to ART among patients at Intermediate Hospital Oshakati.

Methodology

An explorative, qualitative study was conducted. In-depth interviews were conducted with 12 patients from the Communicable Disease Clinic (CDC) at Intermediate Hospital Oshakati who were identified as poor adherents. This data was triangulated with four key-informant interviews with health-workers in the facility. Data were audio-tape recorded and transcribed verbatim. Thematic and content analysis was done.

Results

The reasons given by the participants for defaulting on their treatment included social factors such as spiritual beliefs, cultural beliefs, stigma and discrimination contributed patients first seek traditional healers' opinions before consulting health-worker, non-disclosure of HIV status and unwillingness to take medication in the presence of others. Patient related factors such as poor understanding of treatment regimen, forgetfulness, alcohol use, lack of

commitment, travelling and illiteracy affected the level of adherence to ART adherence. The health service related factors such as poor patient-health provider relationship, negative attitudes of health providers and long distance to health facility were reported to have influenced non adherence.

Unemployment and unavailability of transport were major socio-economic factors that led to defaulting. In addition the findings of the study show work related factors such as work related pressure, together with lack of employers support, as well as treatment related factors, such as treatment side-effects and treatment fatigue, to have contributed to defaulting.

Conclusions

People living with HIV/AIDS are still facing major social challenges such as stigma and discrimination by family members and the community as well as at work, and these hamper adherence. Illiteracy contributes to poor understanding about the importance treatment adherence leading to non-adherence. Therefore in order to improve adherence in communities a lot of effort needs to be put on literacy to enable patients have a better understanding about treatment adherence.

Declaration

I, **Maria Francineth Bauleth**, hereby declare that this study is a true reflection of my own research, and that all sources that have used or quoted have been indicated and acknowledged by means of complete references and that this work, has not been submitted for a degree examination at any other institution of higher education.

[Signature]

Maria F. Bauleth

Date: 20 March 2013~~7 March 2012~~

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I would like to humbly express my profound gratitude and appreciation to almighty God, for giving me the strength, wisdom and courage and chance to complete this study. To him I give all the praise and glory.

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Dedication:

I dedicate this study to my late brother Pedro Lukas Bauleth and my late father Roberto

Bauleth d'Almeida

Table of Contents

List of Tables

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CHAPTER 1: INTRODUCTION

1.1 Global overview of the HIV epidemic

The world at large is facing an unrivalled public health crisis as HIV and AIDS are reported to have reached every corner of the globe and continues to spread disproportionately fast in marginalized populations in most countries (WHO, UNAIDS & UNICEF, 2009). The number of people living with HIV worldwide continued to grow reaching an estimated 33.3 million in 2009, which was more than 20% higher than the number in 2000. It is further estimated that 2.6 million new infections and 1.8 million AIDS-related deaths occurred worldwide in 2009. The latest epidemiological data indicate that the spread of HIV appears to have peaked in 1996 when 3.5 million new HIV infections occurred (UNAIDS/WHO, 2010). Africa remains the global epicenter of the AIDS epidemic, with Sub-Saharan Africa being the worst affected region (UNAIDS, 2011). In 2010 about 68% of all people living with HIV resided in Sub-Saharan Africa and accounted for 70% of new infections.

1.2 Burden of HIV and AIDS in Namibia

In 2008 the Namibian population was estimated around 2.1 million; of these 230,000 were estimated to be infected with HIV giving a national prevalence of 17.8% the estimated population life expectancy was 52 years (MOHSS, 2008). HIV is considered a public health problem in Namibia since the prevalence ranges from 6% at Opuwo, Aranos and Rehoboth district to 32% at Katima Mulilo District. The Oshana region, where the study was conducted, is one of the regions in the country with a high HIV prevalence rate of 22.4% among pregnant women (MOHSS, 2008).

HIV has a major impact on the economy of the country and social progress leading to poverty, a reduction in life expectancy and contributing to food shortage (Jackson, 2002). Although the current HIV sentinel survey in Namibia shows a decline in HIV prevalence from 22% in 2002, to 17.8% in 2008, HIV still remains the major cause of death in the country accounting for 23% of all reported deaths and for 41% of deaths in the age group 15 to 49 years (MOHSS, 2008). A high prevalence of HIV infection in the economically productive age group (25-35 years) diminishes productivity and exacerbates food insecurity, making HIV not only a health issue but an economic and development challenge as well (UNAIDS, 2008).

1.3 HIV/AIDS treatment

The introduction of Highly Active Antiretroviral Therapy (HAART) in 1996 was a turning point for hundreds of thousands of people who had access to the treatment (MOHSS 2007 a). Although HAART cannot cure the disease it has dramatically reduced mortality, prolonged lives, and improved the quality of life of many people living with HIV/AIDS. HIV has transformed from a rapidly progressive and universal fatal disease to a chronic and often stable condition (Arnsten *et al*., 2007; Mills *et al*., 2006).

According to the Ministry of Health and Social Services (2006), after the introduction of ART in Namibia positive outcomes were noted such as a decrease in hospital admissions from 12,852 in 2004 to 11,410 in 2005; and a decrease in AIDS-related deaths from 3,6627 in 2004 to 3,230 in 2005.

1.4 Adherence

Despite the fact that antiretroviral therapy (ART) improves the lives of those infected with the HIV worldwide, ART programs are faced with a major challenge of lack of adherence to treatment (WHO, 2003). Suboptimal adherence to treatment may result in reduced treatment efficacy from increased viral replication, leading to the development of viral mutations, and the spread of drug resistant HIV which is treated with second-line/or third-line medications that are associated with many side-effects and are more expensive than first line drugs (Peltzer *et al*., 2010; Paterson *et al*., 2000). According to authors there is a high risk of treatment failure amongst those taking less than 90% of the prescribed dose. (Arnsten *et al.,* 2007; MOHSS, 2007b; Castro, 2005). Antiretroviral medication adherence is absolutely vital for the success of HAART. There is consensus that in order to achieve sustained suppression of HIV growth over time, and to prevent the development of drug resistance a very high level of adherence, taking at least 95% of prescribed doses, is required. Lower levels of ART adherence provide a temporary clinical benefit but pose a very high risk of developing resistance and treatment failure (MOHSS, 2007b; Castro, 2005; Paterson *et al*., 2000).

The first steps towards effective treatment are to make proper diagnoses of the illness and identify the appropriate treatment. However, medication adherence is an equally important component of the treatment because even the most effective medication will not work if taken incorrectly (Bogart *et al*., 2000).

Access to ART in Sub-Saharan Africa has improved during the last decades by implementing the WHO guidelines that promote task shifting to less specialized health-care workers (UNAIDS/WHO, 2009). Nonetheless Sub-Saharan Africa is still facing a challenge to achieve adherence since it has high rates of HIV/AIDS infection compared to other low income regions. It is reported that there is growing evidence of high rates of patient loss to follow-up. In Africa an ART program retains only about 60% of patients after two years on ART (Rougemont *et al*., 2009).

To ensure proper adherence to treatment regimen the following factors are important:
- ❖ taking all the pills at the right time in the correctly prescribed doses and in the right way,
- ❖ taking all the pills makes up the correct quantities of the ARV combination,
- ❖ taking the medications at the right time: failing to take medication at the right time may cause a rise in viral load which can contribute to development of drug resistance,
- ❖ taking medications in the right way: medications may require to be taken with food or without food to ensure proper absorption by the body. Some medications are better absorbed on an empty stomach and some on a full one. In addition eating the right kind of food might be required since some of the medications are absorbed with fat and eating some fat can make a difference,
- ❖ interaction with other drugs or medications needs to be checked since some drugs can have potentially dangerous interaction with ARVs.

1.5 Access to antiretroviral therapy in Namibia

According to MOHSS (2007 a), HIV/AIDS was once perceived as a death sentence but with the discovery of more potent and efficacious medicines it is turned into a chronic disease. In Namibia the use of highly active antiretroviral therapy (HAART) was introduced in the public health sectors in 2003 (MOHSS, 2007a). By the end of December 2010 there were 89,494 patients on ART in public hospitals with adults constituting 89% and pediatrics 10.2%; it is estimated that at the current growth rate the total number of patients on ART is expected to reach 100,000 by June 2011 (MOHSS, 2010). The government rapidly scaled up the treatment since then, and by 2010 all 44 public hospitals provided ART.

The nationwide programme that provides ART in public health facilities was launched in 2003 by the Namibian Ministry of Health and Social Services (MOHSS) in conjunction with international partner (MOHSS, 2007b). Initially patients were required to pay a small user fees but this was abolished in 2007 to increase access to treatment. Currently HIV treatment is free of charge to patients in all public health facilities including the Intermediate Hospital Oshakati (IHO). The roll-out of free ART services was extended to all 34 state hospitals in Namibia in 2010. Since the introduction of the ART services there has been a massive uptake of them by eligible patients.

To ensure optimum ART outcomes, appropriate use of medicines is required as it is imperative that patients adhere to treatment as per doctor's instructions. Adherence to treatment is a challenging process that requires input and support from all role players including the patient, health care providers, family members, the community, employers and the health system (Fomundam, 2008).

1.5.1 Social eligibility criteria for starting antiretroviral treatment in Namibia

In addition to the clinical and immunological criteria, that were set up by the WHO to guide clinical decisions for initiating prophylaxis and starting ART, the Namibian Ministry of Health and Social Services (MOHSS) has established social criteria which must be met by an individual before ART can be started. The purpose of these criteria, which are listed below, is to maximize adherence and reduce the risk of patients defaulting and to minimize the possibility of development of resistance (MOHSS, 2007b). These criteria include an HIV positive individual who:

> ➢ Must have lived at a fixed address for more than three months.
> ➢ Must have ready access to a designated treatment centre for follow-up.
> ➢ Must not drink alcohol.
> ➢ Must not have untreated underlying psychiatric disorders.
> ➢ Should be committed to lifelong treatment of ART, adherence, practicing safer sex and allowing home visits as indicated (MOHSS, 2007b).

1.5.2 Clinical eligibility for antiretroviral treatment

ART initiation in adults and adolescents are done in accordance with the WHO clinical stages recommendations and the availability of immunological markers, (MOHSS 2007b). The WHO clinical staging of HIV is as follows:

1. WHO Clinical Stage I (Asymptomatic)

During this stage the patient is asymptomatic or may have persistent generalized lymphadenopathy, the person feels well and can perform all the normal activities.

2. WHO Clinical Stage II (Mild disease)

At this stage person has unexplained moderate weight less than 10% of body weight, recurrent upper respiratory tract infections and may present with conditions such as angular cheilites, recurrent oral ulceration, herpes zosters and popular pruritic eruptions.

3. WHO Clinical Stage III (Advanced Disease)

At this stage the person presents with unexplained severe weight loss over 10% of the presumed or measured body weight, unexplained chronic diarrhoea for longer than a month, persistent fever, pulmonary tuberculosis as well as severe bacterial infections.

3. WHO Clinical Stage IV (HIV wasting syndrome)

At this stage the person is clinically very sick and no longer productive, and presents with various opportunistic infections.

1.5.3 Methods to achieve readiness to start HAART and maintain adherence

According to the Namibian National Guidelines for Antiretroviral Therapy, patients who are eligible for HAART have to undergo a period of education and preparation to maximize future adherence (MOHSS, 2007b). During these preparations the patients are informed about commitment to lifelong therapy, the importance of medication adherence to a successful outcome, the need to maintain safer sexual practices to prevent HIV transmission, and the need to report any side-effects of the medications. If a patient is not fully committed to adhering to therapy at the time of initiation then treatment is delayed until all the shortcomings are addressed. When the treatment is started ongoing patient health education is necessary as well as continued monitoring of adherence. Continuous reinforcement of

adherence throughout the entire course of HAART is very essential. Patients are expected to receive care at a communicable disease clinic nearest to their homes, but if they are away from home they should not be denied care or medication refills (MOHSS, 2007b).

1.6 Problem statement

According to the Ministry of Health and Social Services (2006), 95% of the patients enrolled in the ART programme since 2003 in Namibia were still alive in 2006, 4% died and 1% defaulted. At the IHO's Communicable Disease Clinic 9,549 patients were registered on ART during the period May 2004 to March 2009, and 587 (6.1%) defaulted from treatment over this period (Heath Information System (HIS), 2009). Since the programme started at IHO there are no documented studies to assess the clients' response to treatment and challenges they face with respect to adherence. Furthermore the abovementioned situation with defaulting raises questions about adherence because it can be reasonably assumed that poor adherence would precede defaulting. Thus, an even greater proportion of patients are not adhering optimally, though not altogether lost to follow-up. There was therefore a need to conduct a systematic investigation into the factors that influence poor adherence among patients in the Oshana District.
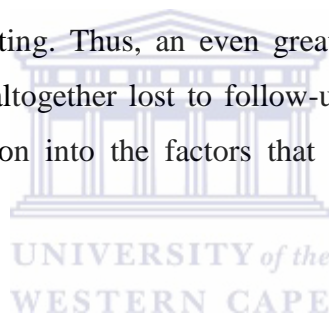
1.7 Outline of the thesis

Chapter 1 introduces the study and includes the formulation of the problem statement and rationale for the study.

Chapter 2 focuses on the review of the relevant literature on treatment adherence.

Chapter 3 explains the research methodology, namely, the aim and objectives, the research design, the study population, sampling, data collection, data analysis, methods for ensuring rigor and ethical considerations.

Chapter 4 presents the study results.

Chapter 5 discusses the findings of the study and limitations of the study.

Chapter 6 presents recommendations and conclusions.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the literature on adherence to antiretroviral therapy (ART) and the factors that influence adherence. The researcher conducted an extensive literature review on the factors that are used to manage adherence, namely, religious, cultural, community and family related factors, patient related factors, socio-economic factors, health service related factors, and traditional factors as well as work place related factors. This chapter concludes by highlighting theories that explain the management (treatment) of defaulting behaviors.

2.2 Definition of concepts

2.2.1 Adherence to antiretroviral therapy

Adherence means to stick to or to follow a prescribed health regimen which could be a medication, a special diet, or to abstain from certain drugs or an exercise regimen. Adherence to treatment is defined as the extent to which a patient takes prescribed medications according to the instructions given by a health professional (McDonald, Garg & Hynes, 2009; Osterberg & Blaschke, 2005; Rabin, El-Sadr & Abrams, 2005; WHO, 2003; O'Brien, Petrie & Raeburm, 1992). The word *adherence* is preferred by many healthcare providers because *compliance* suggests that a patient is passively following the doctor's orders and that the treatment plan is not based on the therapeutic alliance or contract between the patient and the physician (Osterberg & Blaschke, 2005). According to Schonnesson *et al*. (2006), adherence may be operationalized in different ways, namely:

- Dose adherence, which refers to the number and proportion of doses taken;
- Schedule adherence, which refers to adherence taken on time; and
- Dietary adherence, which refers to dose taken correctly with food.

To be able to achieve optimal results from ART, all of these dimensions are required.

2.2.2 Non-adherence

Non-adherence, according to Miller (1997), may take various forms, such as not taking the medications at all, taking medication at the wrong time, taking the wrong dose due to misunderstanding treatment directions or prematurely terminating the medication without

consulting the health provider. Non-adherence also includes not filling prescriptions, self-adjusting the regimen to modulate side effects and toxicity, and incorrectly understanding the doctor's instructions (Chesney, 2003).

2.3 Measurement of adherence

The commonly used methods to measure adherence include biological assays, pill counts, electronic monitoring/medication event monitoring system (MEMS), pharmacy records, self-reporting and direct observed therapy (DOT) (Toussi *et al*., 2008). Authors agree measuring adherence to ART is complex and difficult in both clinical and research settings, the biggest challenge being that up to now there is no "global standard" or "golden standard" to measure adherence since the methods being used are considered to have advantages and disadvantages depending on the setting (Nachega, Mills & Schechter, 2010; Sodergard, 2006; Chesney, 2000). The commonly used methods to measure adherence are discussed below.

2.3.1 Biological assays

This method is used to measure the concentration of a drug, tracer compounds or its metabolite in the blood or urine of a patient (Vik *et al*., 2004). With this method the serum concentration of the drug will probably reflect to regimens of the medications taken and sub-therapeutic levels will probably reflect poor adherence or suboptimal dose strength. However this method is burdensome to the health care providers, expensive and is susceptible to distortion by the patient (Osterberg & Blaschke, 2005).

2.3.2 Pill count

With this method the health care providers (HCP) count the number of pills that remain in the patient's medication bottles or vials each time the patient visits the health facility (McLean, 2003; Grymonpre *et al*., 1998). Pill counting is considered to be the easiest method for calculating patient medication adherence, cost effective and favorable for use in resource limited settings. However, some studies indicate that the technique may underestimate adherence in older populations as patients can manipulate the left over tablets prior to a follow-up appointment in order to appear to be following the regimen, in addition this method provides no information on aspects of taking medications, such as drug holidays

(omission of medication for a certain period of time) and dose timing which may be important in determining clinical outcomes (Vik *et al*., 2004; Osterberg & Blaschke, 2005).

2.3.3 Electronic monitor/medication event monitoring system (MEMS)

MEMS was developed by Aardex-Corporation and is used to assess the number of the missing pills during a period as well as adherence to a dose schedule (Bangsberg *et al*., 2001). The system electronically monitors when the pill bottle is opened as a device is fitted on the pill container which records the date and time the medication container is opened. This device is considered to provide reliable measurements for adherence and a researcher can periodically download the information to a computer (Bangsberg *et al*., 2001). Each time the bottle is opened it is assumed that a dose is taken which however may lead to overestimation of adherence if the dose was not actually taken. The availability and the cost of this system could limit the feasibility of its use in resource limited settings (Moulding, 2007; Osterberg & Blaschke, 2005).

2.3.4 Pharmacy records

This method can be used primarily for medications that are taken for chronic illnesses, such as hypertension and patients on HAART. The strategy uses data provided by the pharmacy that indicate the dates on which ART were dispensed. Rougemont *et al*. (2009) highlight that pharmacy refill adherence is easily accessible and in low–income countries should be considered as an alternative to CD4 count monitoring for identification of patients at risk of virological failure. Concerns have been expressed regarding the completeness and reliability of these records (Vik *et al*., 2004). The pharmacy records are considered to provide only an indirect measure of drugs consumed, but the patterns of over and under consumption, for periods less than that between refills, cannot be assessed.

2.3.5 Self-report

Patients self-report is a relatively simple and efficient method of assessing adherence in clinical practice, it can be widely used in many resource limited settings. It requires patients

to report on their adherence behavior at each visit (Chesney *et al*., 2001). According to Bangsberg *et al*. (2001) and Moulding (2007) self-report is believed to be very flexible, cost effective, and can help to identify the reasons for poor adherence and consequently reduce defaulting

Other tools used to collect information include: questionnaires; surveys; diaries; visual analogue scales (Chesney *et al*., 2001). With questionnaires, a patient is asked to answer the questions about his/her adherence behavior. A visual analogue on the other hand is an instrument that is used to measure the adherence behavior of a patient across a continuum of values (Chricton, 2001). However the self-report method is less sensitive when compared with other methods such as MEMS and unannounced pill counts; since questioning the patients can be susceptible to misrepresentation and result in overestimating the patient adherence (Chesney *et al*., 2001).

2.3.6 Direct observed therapy

This strategy requires that patients take their daily treatment under the direct supervision of a health-worker or a direct observed therapy (DOT) supporter, at the health centre or at the DOT point (WHO, 2003). This strategy has been successfully and extensively used in the management of tuberculosis (TB) but may not be suitable for lifelong treatments such as ART (Nachega *et al*., 2010). According to Sarna *et al*. (2005), DOT-ART was implemented to ensure that patients are consistent in their follow-up schedules. According to Nachega *et al*. (2010) a study done in rural Haiti showed that DOT-ART was acceptable and associated with good clinical outcomes. Based on a study conducted by Nachega *et al*. (2010) in Cape Town that evaluated partial DOT-ART by a nominated treatment supporter versus self-administration, it was found that DOT did not confer a significant advantage in virology suppression or adherence.

2.4 Factors that influence adherence in HIV treatment

These factors can be categorized as religious, cultural, family and community factors; patient related factors; socio-economic factors; work place related factors; and health care team and system related factors.

2.4.1 Religious, cultural, family and community-related factors

Religious beliefs

In terms of religious/spiritual beliefs the literatures suggests that church attendance, religious practices and spiritual beliefs are believed to improve adherence. In population subgroups where religious practices play a pivotal role, religious beliefs can also play a negative role in treatment adherence due to stigma attached to HIV disease since it is associated with immoral behaviors and considered to be casually transmitted hence an HIV infected person is feared (Ware *et al*., 2009). According to UNAIDS (2009), AIDS stigma and discrimination are still common in Indian society, including the work place, which results in many infected people losing their jobs. It has been noted that HIV stigma may be a barrier to medication adherence. Stigmatization of an HIV infected person is caused by fear of death and disease, inadequate knowledge about HIV, sexual morals and lack or poor knowledge of stigma (Theron, 2005). If patients are seen by family members, neighbors, or friends, to be taking ART this is likely to convey a signal that they are HIV positive or living with AIDS. This leads to attempts to hide the medication or change dosing schedules which may affect adherence (Klitzman *et al*., 2004). According to a cross-sectional study conducted in Botswana, 15% of the non-adherent patients feared to be stigmatized (Weiser *et al*., 2003). It was found that patients on ARTs defaulted or even missed their follow-up dates because they find it difficult to take their medication in the presence of others (Nachega *et al*., 2010). Therefore those infected fear to disclose their HIV status or to be seen at the clinic and eventually default treatment (Nyblade *et al*., 2003; Kelly, 2001).

Conceptualization of health and illness in a traditional African context may be considered a supernatural phenomenon linked to a supreme deity, ancestral spirits, and other objects (Kale, 1995). Traditional healers, according to Kale (1995), play a role in determining a patient's health status and either reduce or enhance his or her well-being. There is a possibility that such medical seeking patterns might affect adherence (Walker, Reid & Cornell, 2004).

Cultural beliefs

A study conducted in Tanzania found that beliefs that people are bewitched played a role in contributing to poor adherence to treatment (WHO, 2006). Patients' beliefs and understanding about their illness and the effectiveness of treatment they are taking are predictive of adherence.

Furthermore social circumstances of people might play a role in adherence. According to Swartz (1995) there are cultural and contextual factors unique to South Africa that may affect adherence and ART uptake in the context of the national roll-out. According to Edginton, Sekatan and Goldstein (2002), an ethnographic study conducted in South Africa noted that some patients stopped taking their ART medications after consulting a traditional healer because they were told that their problems require traditional medications only. Similarly, some patients were told by traditional healers that they are healed and therefore did not need to take the medications anymore (Khan *et al*., 2005). South Africa is estimated to have between 150,000 and 200,000 practicing traditional healers (Kale, 1995). According to Abdool Karim *et al*. (1994) 80% of the South African population consults traditional healers. Traditional healers usually attend to many patients' needs in South Africa, Namibia, and many other African countries.

Family and social support

Lack of family and social support impact negatively on adherence. Social support for adherence includes encouragement from friends and family for a patient to co-operate with the recommendation and prescription of the health professional (DiMatteo, 2004). It is reported that difficult family circumstances such as those noted in South Africa contributed to high rates of migration, teenage pregnancy, overcrowded living conditions, family violence, and substance abuse, and are likely to create conditions under which family and social support are poor, contributing to compromised adherence rates (Wood, Tobias & McCree, 2004). HIV patients living alone were reported to not be taking their medications because there was no one to take care of them at home (Jaiswal *et al*., 2003).

According to Maskew (2007), some people do not disclose their HIV status to relatives and friends because they fear discrimination should their status be known. People with such fears find it difficult to take their medications in the potential presence of relatives' friends and work colleagues and consequently miss their doses.

2.4.2. Patient factors

Factors that influence patients' willingness to adhere to treatment include: poor knowledge/understanding and beliefs about medications effectiveness, forgetfulness, alcohol

intake, lack of commitment, non-disclosure, unplanned travelling, lower education level, depression and severe anxiety.

- ▪ *Poor knowledge/understanding and beliefs about medications effectiveness*

If a patient is well informed about HIV and believes that HAART is effective and prolongs life, and knows that poor adherence may lead to viral resistance and treatment failure, this contributes to a patient's ability to adhere (Gifford *et al*., 2000). Studies conducted in Tanzania on adherence for other diseases indicated that patients often do not have enough knowledge or do not remember how to use various prescribed medicines, contributing to their irrational use (WHO, 2006). According to a study conducted by Osterberg and Blaschke (2005), 9% of patients in Ruanda reported not taking medications because of lack of information.

- ▪ *Forgetfulness*

Personal factors such as forgetfulness are predictors of sub-optimal adherence. A study done in Ruanda found that forgetfulness was among the top three reasons for missing a dose accounting for 30%, furthermore it was found that 44% of patients who took the correct number of doses but not according to schedule stated this was due to forgetfulness (Osterberg & Blaschke 2005; Baptiste, 2008). According to a study conducted by the Adult AIDS Clinical Trial Group in USA amongst all patients taking combination antiretroviral therapy the most common reason for missing medications given by 66% of patients was forgetting to do so (Chesney, 2000).

- ▪ *Alcohol intake*

More recent studies indicate that alcohol intake is the most frequent and important factor reported to negatively impact adherence in developing countries (Pulvirenti, 2005; Gifford *et al*., 2000; Nachega *et al*., 2010; Chesney, 2000). Studies conducted in India, Tashkent, Uzbekistan, Mexico, and South Africa, found excessive alcohol intake contributed to treatment defaulting (Guillen *et al*., 2008; Allen, 2006; Hasker *et al*., 2008; Jaiswal *et al*., 2003). The studies found that patients tent to forget or ignore taking their medication after excessive consumption of alcohol (Guillen *et al*., 2008; Jaiswal *et al*., 2003; Allen, 2006).

- *Lack of commitment*

The patient's degree of commitment to follow a treatment regimen and, the degree of confidence in being able to follow it, influence treatment adherence (WHO, 2003). Having a constant goal will influence the effort used to bring a course of behavior to a successful conclusion and is likely to increase with perceived behavior control. For instance if two individuals are equally strongly motivated to learn a skill and both try to do so, the person who is confident that he can master this activity is more likely to perceive success compared to the person who doubts his ability (Ajzen, 1991).

As a general rule, strong intentions to perform a behavior lead to a more likelihood of the behavior being performed. Therefore if a patient on HAART is strongly motivated to adhere to the treatment such a patient will be adherent but on the other hand if the patient believes that discontinuing the medication is the right thing to do and if the social network is weak then the patient will eventually default (Bandura, 1994). It is therefore necessary health workers to continuously educate and emphasize the importance of adherence to be able to strengthen patients' confidence and to build self-management skills.

- *Unplanned traveling*

According to WHO (2007), patients find it difficult to adhere to their treatment schedules when they are away from home and in the presence of strangers. A study conducted in the USA by the adults AIDS clinical group indicates that 57% of those who missed their doses claimed to have been away from home (Chesney, 2000). This happens most of the times when patients travel to social events that last for several days such as weddings, funerals or any other family related gathering. According to Munro *et al.* (2007) it was found that patients find it difficult to continue taking their treatment in the presence of others or miss their follow-up dates and consequently default treatment.

- *Lower education level*

Some studies indicated that patient who is illiterate have poor knowledge related to diseases, self-management, and the worse self-reported treatment leading to poor treatment adherence and in turn leading to a 30% to 50% increase odds of hospitalization and high annual health care cost (Powell & Kripalani, 2005; Maskew *et al.*, 2007; Bassetti *et al.*, 1999). Bosworth and Oddone (2002) specify the importance of basic reading skills in a health care setting

where patients participate in the planning and implementing therapeutic regimen. According to them in the USA it was found that only 42% of the patients in two public hospitals were able to understand instructions for taking medications on an empty stomach and 26% were not able to understand that a next appointment was scheduled. A study conducted in Nepal, amongst non-adherent patients, indicates that the majority of the participants did not have basic levels of literacy and they indicated that they did not understand what was said by the health-workers which resulted in patients defaulting treatment (Wares *et al*., 2003).

- *Depression and anxiety*

According to the WHO (2006), psychological factors such as depression and anxiety are predictors of sub-optimal adherence and most people with HIV usually suffer from a psychiatric disorder. It is reported that up to 70% of AIDS patients have symptomatic depression and/or anxiety. Moreover it is indicated that patients who are on long term treatment for diseases such as hypertension, TB, diabetic, and HIV/AIDS, tend to suffer from depression and stress as they are obliged to take medications on a daily basis (Simpson, 2006; Kim *et al*., 2003). Studies indicate that mental conditions, such as anxiety, stress and depressive disorders, have a negative effect on treatment adherence (Kagee & Le Roux, 2007; Kilbourne *et al*., 2005).

2.4.3 Health system factors

Health system factors such as long distances to health facilities, shortage of staff at clinics, poor patient provider relationship and health-workers' attitudes have been identified as barriers to adherence to ART (Charurat *et al*., 2010; WHO, 2003; UNAIDS, 2010).

- *Long distances to health facilities*

Long distances to health facilities impact on adherence. Despite the fact that adherence is said to be 90% amongst people taking ART in Sub-Saharan and Africa, transportation over long distances from/ to health facilities remains an important barrier to sustain adherence to medications (Charurat *et al*., 2010; Rougemont *et al*., 2009; Ware *et al*., 2009; Bennet *et al*., 2008). A study done in Addis Ababa found that it took up to two hours for patients to walk to their the nearest health facility to receive treatment (Demisse, Lindtjorn & Berhane, 2002).

Transportation difficulties, according to Mills *et al*. (2006), were often the major interference to adherence.

■   *Shortage of staff at clinics*

Factors that influence adherence to therapy include overworked health providers, because of overcrowding at the health facilities, which in turn lead to patients leaving the clinic without medications contributing to non-adherence (WHO, 2003). According to UNAIDS (2010), most Sub-Saharan Africa countries, as well as countries in Asia, the Middle East, and North Africa, are overburdened by a shortage of health-workers which in turn leads to overcrowding at health facilities.

According to Mapunjo and Urasa (2007), developing countries are faced with many challenges such as shortage of qualified human resources leading to lack of knowledge on adherence and of effective interventions for adherence. In a study conducted in Tanzania it was found that one third of the health facilities did not have a social worker.

■   *Poor patient – health provider relationship*

A large number of studies indicate that poor follow-up by providers, and ill-treatment by providers, such as scolding the patient for missing appointments and refusing to give more medications, contributed to non-adherence among patients (WHO, 2003; Munro *et al.,* 2007a; Hasker *et al*., 2010). Non-compliance, according to Snelgrove (2006), can damage the relationship between health professionals and patients. Good relationship between doctors and patients is an aspect of social support that leads to good adherence (Ciechanowski *et al*., 2001). According to Mills *et al*. (2006), 17 studies reported that a trusting relationship with HCPs was a facilitator of adherence. A health-worker is most of the times seen as a person in authority, in possession of specific expertise, and in whom a patient invests hope for the recovery process (Bary, 2004).

2.4.4 Unplanned ART interruptions

There are various types of different crisis that can potentially undermine ART treatment. According to Veenstra *et al.* (2010) in Southern Africa and broader region, the 2008 floods in Mozambique, the ongoing political and economic crisis in Zimbabwe and the 2007 public

16

sector strike in South Africa lead to poor access to food supplies and poor access to health care resulting in inadequate management of both acute and chronic diseases and those on ART not being able to access the medication they require.

According to the WHO (2003) changing environmental situations such as natural disasters are some of the factors reported to have a significant negative effect on adherence. Unfavorable contexts limit individual's control over their own treatment, in Zimbabwe according to Veenstra *et al.* (2010) there were reports of patients on ART missing drug doses, sharing drugs, selling their drugs and changing regimens to try and cope with inadequate drug supplies and poor economic circumstances so increasing concerns of a drug resistant HIV epidemic.

2.4.5 Socio-economic factors

The socio-economic status of a patient has been indicated to impact on adherence of ART treatment. Factors such as unemployment and poverty have been found to have an influence on ART adherence. A study, conducted at the Temba Lethu Clinic at Helen Joseph Hospital in Johannesburg, as well as a cross-sectional study conducted in Botswana of the social, cultural and structural determinants of treatment adherence, shows that financial problems are the leading cause of failure to follow-ups since these represents 34% and 44% of all the problems. Patients who defaulted ART cited transport cost and having to pay to open a file at each visit as the biggest obstacle to obtain treatment (Maskew, MacPhail, Menezes & Rubel, 2007; Weiser *et al*., 2003). Poverty in itself is likely to affect adherence, for example, funds to travel to an ART clinic may not be available and food required to be taken with medications may not be easily affordable. The demands of several competing responsibilities, such as work and family life, together with the stress associated with poverty and unemployment may preclude an acknowledgement of the importance of complying (Mills *et al*., 2006; Simoni *et al*., 2002). However poverty is also an environmental and political problem in the sense that appropriate transport infrastructure may not exist in rural areas and in many townships. The need to take time off work without pay and transport problems to attend clinic appointments were serious barriers to adherence among patients with hypertension and diabetes, to the extent that many failed to arrive for appointments or fill prescriptions (Kagee *et al*., 2007).

2.4.6 Work place factors

Studies have indicated that some patients have prioritized work over treatment since some patients hide their diseases for fear that their employers may discover their disease and perhaps terminate their employment with consequent effects on adherence (Maskew, MacPhail, Menezes & Rubel, 2007). Reports also indicate that for many patients they have to choose between work and adherence (Maskew MacPhail, Menezes & Rubel, 2007). In rural areas, for example, there is a conflict between attending a clinic for treatment and the need to earn some money for a living. Such patients have no option but to abandon their treatment as it is too difficult to combine the two.

2.4.7 Treatment related factors

Side-effects and treatment fatigue are believed to have a significant impact on ART adherence (Kaona *et al*., 2004; Wares *et al*., 2003).

- *Side-effects*

According to Snelgrove (2006), compliance can also be problematic when patients are expected to continue to take medication unquestioningly even though it is causes adverse side-effects. Side-effects of medications were found to contribute to 9% of the reasons leading to non-adherence among patients in Botswana (Weiser *et al*., 2003; Gaskins, 2000). According to a study conducted in Pakistan amongst TB treatment defaulters they cited that they defaulted because they were not provided with adequate information regarding treatment side-effects (Khan *et al*., 2005).

- *Treatment fatigue*

Some studies cited patients on ARVs being tired of taking them and often desired to take a holiday because the drugs were not being well tolerated by their bodies (WHO, 2006). According to a cross-sectional survey conducted among the physicians of a Swiss HIV cohort study amongst the most common reason for patient discontinuing treatment was the perception that treatment was too complicated (18%) leading to treatment fatigue (Bassetti *et al.,* 1999). Conferring to Eholie *et al.* (2007) longer duration of treatment regimens in some studies were reported to be associated with treatment fatigue and exhaustion as the patients concerns regarding the lifelong drug dependency and consequences.

2.5 Theories of health behavior

Adherence remains a major problem in the clinical settings of chronic conditions treatment. According to Sodergard (2006), although adherence has been thoroughly examined still there is no definite solution regarding low adherence. This section presents the theories used to explain the models that can be used to explain treatment defaulting behavior namely: Ley's model of communication, and the theory of planned behavior (TPB).

2.5.1 Ley's model of compliance

Treatment adherence can be explained theoretically using Ley's model of compliance since it attempts to describe the interaction between factors that lead to adherence (Olivera, 2009; Ogden, 2000). This theory claims that compliance can be predicted by a combination of patient satisfaction with the consultation with the HCPs and the importance of memory pertaining to , for example, understanding of information, as well as the ability of a patient being able to recall the information provided by the HCPs (Olivera, 2009; Kessels, 2003, Ogden, 2000).

Patient satisfaction

Patient satisfaction, according to this model, is determined by the content of the consultation. Studies show that patient satisfaction depends on various components of consultation especially the emotional support that a patient receives from health care givers (Munro *et al*., 2007b). According to Olivera (2009), patients want to know as much information as possible, even if this information is bad news. Therefore it is important for HCPs to provide adequate information to their clients regarding the diagnosis and prognosis of the disease and the prescribed treatment as well as the potential side-effects of the treatment as this is believed to reduce defaulting behaviors (Ogden, 2000).

Patient understanding

Patient understanding of information means that patients will only be able to effectively adhere to the given instructions when provided with a clear understanding of what is expected of them or with respect to their prescribed treatment (Munro *et al*., 2007b). According to Kessels (2003), the greater the amount of information presented, the lower the proportion correctly recalled; furthermore almost half of the information that is remembered is incorrect. Lack of provision of information by HCPs may lead to defaulting due to a lack understanding by patients. Therefore it is vital that HCPs clearly clarify the instructions that they are

providing to patients on HAART as well as TB patients to curb defaulting behaviors (Ogden, 2000).

Patient recall

Patient recall according to Ogden (2000) is the extent to which the patients are able to remember the information provided by HCPs. This theory stresses the importance of memory next to factors such as underlying information and satisfaction with treatment. According Kessels (2003), 40-80% of medical information provided by health-care practitioners is forgotten immediately. The same author argues that patients tend to recall the information that was clearly explained to them by the HCPs which consequently reduces defaulting behaviors. The greater the amount of information presented the lower the proportion correctly recalled (Kessels, 2003). Various factors have however been found to influence the ability to recall the information provided. These factors include the education level of the patient, medical knowledge, and mental instability such as anxiety (Munro *et al*., 2007b; Kessels 2003; Ogden, 2000).
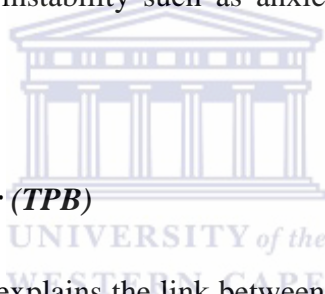
2.5.2 Theory of planned behavior (TPB)

The Theory of Planed Behaviors explains the link between attitudes and behaviors; it as well predicts behaviors based on the understanding that behavior can be planned (Armitage & Conner, 2001). According to Armitage and Conner (2001) this theory can help health care providers to understand how they can change the behavior of their patient.

The central factor in the theory being that of an individual's intentions to perform a given behavior and such intentions are assumed to indicate the motivational factors that influence a behavior. On the other hand the person might be motivated to perform a behavior but the performance depends to some degree on non-motivational factors, such as, availability of required opportunities, and resources, such as, time, money, skills and co-operation of others (Ajzen, 1991). A patient may be willing to adhere but because of lack of resources will default treatment. Therefore the resources together with the opportunities available to a person must to some extent dictate the likelihood of behavioral achievement.

According to Ajzen (1991) in TPB there are three conceptually independent determinants of intention which are considered vital in guiding human behavior and are presented below:

i. Attitude towards a behavior which refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal the behavior in question.

ii. Subjective norms are a social factor predictor which refers to the social pressure to perform or not perform the behavior.

iii. Control is an antecedent of intention which refers to the perceived ease or difficulty of performing the behavior and is assumed to reflect past experiences as well as anticipated impediments and obstacles.

The above theory (TPB) can be applied to improving or developing health communication interventions for patients on HAART. The health care providers can develop behavioral therapy for HIV patients using this theory.

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CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter discusses the methodology used in this study, which includes aims and objectives, the study design, the study setting, research population, sample and sampling procedure, data collection and analysis, ethical considerations and study limitations.

3.2 Aim and objectives

The study explored factors that influence adherence to ART amongst patients at Oshakati Intermediate Hospital, Namibia.

The specific objectives of the study were:

● To describe experiences of patients being on ART and living with HIV/AIDS,

● To explore the challenges of patients' socio-economic status/position had on adherence,

● To explore the of role that health care services delivery played on adherence,

● To explore community-related stigma and discrimination and its influence on patient adherence,

● To explore factors related to treatment regimen that influenced adherence behavior.

3.3 Study design

Research design refers to the plan and overall structure of an investigation used to obtain evidence to answer research questions. Parahoo (1997: 142) defines a research design as "*a plan that describes how, when and where data are to be collected and analyzed*", while Burns and Grove (2003: 195) describe it as "*a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings*". This study is qualitative, explorative and descriptive in nature. The rationale for using the qualitative approach was to meet its aim to describe the patients' experiences of being on ART and to explore the factors that influence adherence to ART. Pope, Ziebland and Mays (2000) consider qualitative research designs to be suitable for research that aims to explore health behaviors because qualitative studies place more emphasis on the lived experience of participants in an attempt to understand the phenomenon in its entirety rather than focusing on specific concepts. An exploratory study design enables greater openness from participants

and allows greater flexibility in data collection by giving participants room to give more information. This is confirmed by Baum (2008:180) who say that: "qualitative research is best suited for studies that aim at exploring health behaviors and gives understanding of how people interpret health and diseases and make sense of their experiences as well as a systematic review of the research question that cannot be answered by quantitative methods". During the current study, open-ended questions and probes were used to explore more in-depth information form the participants. This allowed the participants to express themselves in their own words which would have been difficult if using quantitative methods.

3.4 Description of the study setting

The study was conducted at the Communicable Disease Clinic (CDC) at the Intermediate Hospital Oshakati (IHO) which is situated in the Oshakati district. Oshakati district consists of poor rural communities situated at the outskirts of the suburbs of Oshakati town. There are high levels of poverty and low levels of education among people living in these communities. The IHO is a 750-bed hospital which serves the Oshakati district. Apart from the IHO the district has five health centers, 11 clinics and one private hospital. Recently the provision of ART services was delegated to the IHO CDC and the cumulative number of persons enrolled in the HIV care at this facility is 13,561. The ART services recently were delegated to two health centers. The IHO CDC was chosen for this study because it is the main clinic in the district that caters for the biggest number of patient from different areas and different backgrounds.

At the IHO, adherence to ART is determined by balancing the quantities of pills when the extras exceed a week supply. In view of this an allowance of two days is given to each patient outside the prescribed date of visit. If a patient misses the first month follow-up appointment but eventually presents within the allowance period then such a patient is considered to have missed his/her appointment date but adherent to treatment if the issued medications balance.

3.5 Study population

According to Parahoo (1997: 218), population refers to "the total number of units from which data can be collected", such as individuals, artifacts, events or organizations. Conferring to Burns and Grove (2003) population is all elements that meet the criteria for inclusion in a study. In this study the study population included all adult males and females aged 18 years

or older who were on ART at the selected health facility, and who were identified as poor adherents by the health-care team.

3.6 Sampling

Polit and Hungler (2003: 234) define a sample as "a representative portion of the population under study". Sampling is a process by which the sample is selected so that research findings can be generalized to the population. According to Bassett (2001), qualitative research does not require a large random sample because qualitative studies seek to describe a range of experiences rather than collect numbers for statistical analysis. In qualitative research the sample size depends on the purpose of inquiry. Therefore the situations, persons and events most likely to yield information-rich data about the problems are selectively chosen (Holloway & Wheeler, 1997). This type of sampling is known as purposive sampling and in some instances sampling might continue until data saturation has been achieved.

After an explanation of the purpose of the study, the nurse together with the community counselor those that are operating at the CDC both helped to identify potential participants from the ART register who were considered to be poor adherents. Patients attending the CDC for follow-up and who met the eligible criteria were selected. Sampling was done based on the following criteria, namely clients who were:

- identified as poor adherents to ART by the clinical team;
- residents of Oshana region;
- able to communicate in Oshiwambo, Afrikaans, Portuguese or English. (These languages were chosen because they are the most common spoken ones in the area where the study was conducted.)

The nurse together with the community counselor informed the researcher of the date when potential participants were coming for their appointments and provided the contact details of the identified defaulters. During the period 17 January 2010 to 16 February 2010 potential participants were approached by the researcher for possible participation in the study. The researcher then met the eligible participants in March 2010 and explained the purpose of the study (Appendices 1 and 3). Each participant agreed on the date of interviews and was asked to give written consent to agree to participate in the study (Appendix 4). The eligibility criteria were: adults aged 18 and above; they had to be residents of the Oshana region;

identified as poor adherents to ART and speaking Oshiwambo, Afrikaans, Portuguese or English A total of 12 participants were interviewed. The participants comprised equal numbers of employed/unemployed, males/females and those co-infected with TB or other co-morbidity. Participants were chosen to represent, as far as possible, a wide range of experiences and perspectives of ART patients at the IHO CDC.

3.7 Description of participants

Key informants comprised staff at the CDC: a clinician, a registered nurse, a pharmacist assistant and a community counselor. In-depth interviews were conducted with the 12 participants and their characteristics are presented in Table 1 below. As evident in the table participants were between 27-60 years old and the majority of them were not married. There were more unemployed females compared to the males.

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Table 1 Characteristics of the Participants

Characteristic	Female	Male	Total
Age			
27-30	2	-	2
31-40	3	4	7
40-45	1	1	2
46+	-	1	1
Started treatment			
2006	1	-	1
2007	1	-	1
2008	1	2	3
2009	3	4	7
Marital Status			
Single	5	3	8
Married	1	2	3
Co- habiting	-	1	1
Widowed	-	-	-
Employment Status			
Employed	3	3	6
Unemployed	3	3	6
Co- infected			
Not- Co-infected	3	3	6
Co-infected with TB	2	2	4
Co- infected MDR	-	1	1
Co –infected with other diseases	1	-	1

3.8 Data collection

According to Burns and Groove (2005) data collection is the precise and systematic gathering of information relevant to a research problem using instruments which can be in the form of questionnaires, interview schedules and guides, field notes and records and/or artifacts. In a qualitative study the most common data collection methods used are interviews, observation, and examination of written texts, field notes and artifacts.

In this study two different data collection methods were used, namely key informant interviews (Appendix 2) and in-depth interviews (Appendix 1). Prior to conducting in-depth interviews with the 12 participants the researcher conducted focused interviews with the key informants at the selected study site. The researcher asked the participating clinician, registered nurse, pharmacist assistant, and a community counselor, to give their personal respective views on the problem of adherence and causes for poor adherence. Bowling (2002) considers in-depth interviews as a good tool to use when seeking to learn about people's feelings, thoughts and experiences. In this study in-depth interviews were the primary source of data collection. Interviews in this study were conducted in languages of each participant's choice, mainly Oshiwambo, English, Africans or Portuguese as the researcher is conversant with all these languages spoken in the region.

3.9 Data analysis

Data analysis is the interpretation and organization of data collected during fieldwork for the purpose of discovering important dimensions and patterns of relationships (Polit, Deck & Hungler, 2001). According to Henning, Van Ransburg and Smit (2004), in qualitative research data analysis is an on-going, emerging and interactive non-linear process. Similarly, in this study data analysis continued simultaneously with data collection.

In-depth interviews with the participants and key informants were taped and transcribed verbatim to ensure that no information was lost prior to starting data analysis. In this study data analysis commenced as soon as the taped interviews were transcribed and the data were read though over and over to identify emerging themes, categories and sub-categories. Qualitative data analysis according to Coffey and Atkinson (1996), needs to be conducted with rigour and care. Phenomenological research analysis starts as soon as the first data are collected. Prior to data analysis a researcher has to clarify personal preconceptions about the

phenomenon under study. This is known as 'bracketing' suspending the researcher's meaning and interpretations as much as possible and entering into the world of the individual interviewed (Tesch, 1990). In this study bracketing and reflexivity were applied during data analysis.

The transcribed interviews were coded into main themes and sub-themes and notes were taken throughout the interviews to capture non-verbal information. Thematic analysis method was used for data analysis, following the five stages of thematic analysis as described by Pope, Ziebland and May (2000), namely familiarization, identification of a thematic framework, indexing, charting, and mapping and interpretation. After the completion of the tape-recorded interviews, the researcher replayed the tape and listened carefully to the content as well as the questions asked. The tape-recorded responses during the face-to face interviews were manually transcribed verbatim and read over and over to gain a sense of the whole.

3.10 Rigour

When conducting qualitative research rigour is of utmost importance to ensure that results and interpretations are credible and trustworthy and the basic approach to ensure rigour is systematic and self-conscious research design, data collection, interpretation and communication (Mays & Pope, 2000). According to Marshall and Rossman (1995), credibility is a process of demonstrating that an inquiry is conducted in a manner that ensures the accuracy of how subjects were identified and described. The researcher in this study is a Namibian registered nurse and midwife employed by the Namibian Ministry of Health and Social Services. The researcher works at the IHO as the chief registered nurse (supervisor) of the outpatient department casualty service area and CDC where the study was conducted. Based on this it is evident that the researcher's possesses knowledge to conduct research of such a sensitive nature. The researcher was able to gain access to ART patients as well as address concerns about confidentiality amongst participants. To ensure credibility, the researcher used the triangulation method (Gifford, 1996), whereby the information from the in-depth interviews was triangulated with the information from key informants.

The researcher strictly adhered to the selection criteria and only eligible participants were interviewed to ensure credibility. An uniform interview guide was developed and used with every participant. With the help of an experienced independent transcriber the interviews

were transcribed verbatim to ensure that no data were lost in the process. The transcribed interviews were sent to the researcher's academic supervisor for inputs on the quality of interviews conducted and the coding of data was presented as well in order for the supervisor to verify perspicuity.

3.11 Ethical considerations

Ethical approval for the study was obtained from the University of the Western Cape (UWC) Senate Research Committee. Permission to conduct the study was sought from the Permanent Secretary of the MOHSS. The letter of approval was sent the regional director of the Oshana Region, the medical superintendent of IHO and to the hospital management as well as to the doctor in charge of the CDC (Appendices 5 and 6).

The purpose of the study was explained to the key informants as well as the participants and then written consent (Appendix 4) was obtained from those who were willing to participate prior to the interview. The purpose of the informed consent was to ensure that the participants understood what was expected of them and that they agreed to take part (Terblanche, Durkheim & Painter, 2007).

Participating in the study was voluntary for both groups (12 participants and the key informants) and they were assured of anonymity. The researcher made sure that all aspects of the study were handled in a way which was respectful to the human rights and needs of the participants (Human Sciences Research Council, 2009). Participants were assured that data would be treated in a confidential manner and they were informed about their right to withdraw at any time during the study without any consequences. They were also assured that refusing to participate in the study would not affect future treatment at the clinic. They were assured that the information gathered would only be used for research purposes for this study. An information sheet was provided to all participants and key informants. They were informed that the researcher intended audio taping the interviews prior to commencement of the interviews which were conducted in a private room available at IHO to ensure privacy of the participants. To ensure anonymity, personal details of the participants were not recorded and all data have been kept secure. Data were captured personally by the researcher on a personal computer thus the researcher has sole access to these data.

CHAPTER 4: RESULTS

Main themes

The research analysis of the interviews is clustered around the following six themes:

- ❖ Social factors
- ❖ Patient related factors
- ❖ Health service factors
- ❖ Socio-economic factors
- ❖ Work place related factors
- ❖ Treatment related factors

The data of the results are presented in Table 2. Presentation of participants' comments is in italics.

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Table 2: Classification of Results

THEMES	SUB-THEMES	CODES
1. Social factors	1.1 Spiritual beliefs	♦Faith in healing ♦Traditional therapies
	1.2 Stigma	♦Emotional disturbance ♦Non-disclosure of HIV status ♦Unwillingness to take Antiretroviral Treatment in the presence of others ♦Patients accessing treatment at clinics far from home. ♦Lack of social support
	1.3 Discrimination	♦ Emotional abuse ♦Depression ♦Isolation ♦ Rejection by partner ♦Lack of family support

2. Patient related factors	2.1 Poor understanding of treatment regimen	♦Awareness of the importance of adherence
		♦Knowledge of consequences of poor adherence
		♦Leftover pills
	2.2 Forgetfulness	♦ Reminder of drug intake
	2.3 Alcohol use	♦Difficulties to stop using alcohol
		♦Lack of memory
		♦ Exposure
	2.4 Lack of commitment	♦Networking
		♦ Peer group influence
		♦Lack of self-motivation
	2.5 Traveling	♦Unplanned traveling
	2.6 Lower education level	♦ Poor understanding
3. Health service factors	3.1 Long distance to health facility	♦Transport cost
	3.2 Shortage of staff at clinics	♦Lack of order
		♦ Long waiting times
	3.3 Poor patient- health provider relationship	♦Lack of empathy
		♦Lack of trust

4. Socio economic factors	4.1 Unemployment	♦ Work-related migration
	4.2 Unavailability of transport	♦ Inability to go for follow-ups
	4.3 Floods	♦ Inaccessible to health facility
5. Work place related factors	5.1 Work related pressure	♦ Losing jobs
		♦Encouragement
	5.2 Lack of support from employers	
6. Treatment related factors	6.1 Adverse Drug Reaction	♦ Side-effects
	6.2 Treatment fatigue	♦Pill burden
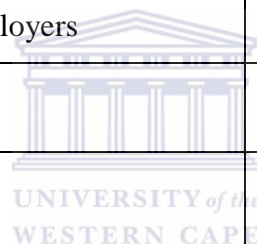
4.1 Social factors

In this study, social factors such as spiritual beliefs, stigma and discrimination, were reported to have had negative effects on participants' adherence to medication and compliance with the health regimen.

4.1.1 Spiritual beliefs

Religious and cultural beliefs such as having faith in healing and reliance on traditional therapies had detrimental effects on adherence.

♦*Faith in healing*

Some participants reported that when they sought advice from friends, they advised them to rely on their faith instead of the medical or health care system. Participants, who turned to religion (a church) for support, were often advised by fellow church members to rely on God only. This led to some of them defaulting on their treatment in solidarity to the faith.

"...when I told my friend that I was HIV positive he advised me that the best is to go to church for prayers and not to the hospital..." (Employed Male 36yrs).

"...I joined this church for prayers and the church members told me that what I need is only to have faith in God. I don't need the pills. Therefore, I stopped them [the medication]. I only restarted the medication when I started not feeling well." (Unemployed female 28yrs)

"*....Most churches are misleading they are telling people to stop taking their treatment so that they can pray for them to get healed....*" (Nurse key informants (NKI)

♦ *Traditional therapies*

Patients with strong cultural beliefs first seek traditional healers' opinions before consulting health-workers. The traditional healers, in turn, convince them that they are bewitched and can only be cured with traditional medications.

"...when I told my mother about my sickness I did not tell her I was HIV positive. Therefore, she took me to the traditional healers…One should not make a mistake to mix traditional medicine with these medications (ARVs); you will die. Therefore, I stopped taking these medicines to go and find out what was wrong with me from the traditional healer…." (Employed male 36yrs)

"...most of my relatives don't know how to read and write just like me. When I became sick, they took me to the traditional healers…" (Employed female 37yrs, co- infected with TB)

"Hmm! .....even if some people tested HIV positive, they still believe in some other things like that they are bewitched and they rather seek help from traditional healers".(Doctor key informants(DKI)

4.1.2 Stigma

Stigma in the community and from family members has impaired adherence to treatment since this causes affected persons to experience negative emotions, fear of disclosing HIV status and unwillingness to take ART in the presence of others. Furthermore, key-informants reported that patients have difficulties to get hold of treatment supporters to accompany them to the clinic since those close to them refuse, fearing to be seen at the clinic by people known to them, who might think that they are also infected with HIV.

♦*Emotional disturbance*

Some patients reported being depressed and unhappy because people from their location were gossiping about their HIV status. One participant claims to have reported those gossiping about his HIV status to traditional authorities, which resulted in those involved being referred to traditional courts.

"...Last month I attended a traditional court about some ladies from our location that were spreading rumors as to who is HIV positive in our location…we had to report it because they made us feel very bad." (Employed male 36yrs co-infected with TB)

"…Community people should be left like that. Anyway nobody will stop them from gossiping about us who are HIV positive, and you know what? They enjoy when others are suffering…It really hurts a lot, sometimes I spend sleepless nights because of that." (Unemployed female 40+yrs co- infected with TB)

"…my relatives, when they found out that I was HIV positive they were refusing to eat my food and they were telling their children not to eat or touch my food…it made me feel very sad."(Self-employed female 36yrs)

♦*Non-disclosure of HIV status*

Fears of stigmatization led to some participants selecting who to disclose their HIV status to. Patients feared their HIV status would be known by people in the community therefore they kept it a secret even from their partners.

"…It is only I and my sister who know my HIV status; not even my girlfriends are aware. People in the community will laugh at you and makes your life impossible if they happen to know your HIV status." (Employed male 36yrs)

"…I was finding it very difficult to accept my HIV status; I also had a problem revealing it to anybody…. I later told my sisters, but that has also caused problems because I stared associating everything that has been said against me with my HIV status, even if it was not related to HIV …." (Unemployed female 27yrs co-infected with other diseases)

♦*Unwillingness to take ART in the presence of others*

Participants reported that they would rather not take their treatment than take it in the presence of friends and acquaintances.

"…I get lots of visitors if they pay me a visit the time I was supposed to take my medications It becomes difficult for me to take them because they may suspect that I am on treatment…"(Employed female 37yrs, co-infected with TB).

♦ *Patients accessing treatment at clinics far from home*

Stigmatization also led some participant to access medical treatment at clinics that are far from their homes to avoid being seen by people known to them when they go for follow-up appointments.

"...I come for treatment here because I did not want people in our area to know that I am on ARTs but now I am getting it difficult with transport money, I want to go back to the nearest clinic. (Unemployed female 28yrs).

"Sister, here we get people from Omuthiya, which is more than a 100km from here. Leaving Omuthiya clinic behind, but what can we do? It is their rights Sister. Patients are afraid to be rejected by people in the community. (Community counselor key- informant (CCKY)

"The clients, if they find people they know they just disappear without treatment, perhaps because they don't want people to find out that they are on treatment." ...Just look at those boxes they are very full of health passports of patients who just left the clinic without being attended to." (NKI)
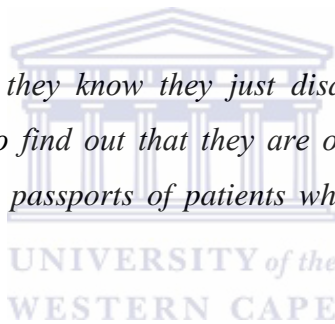
♦ *Lack of social support*

According to the key-informants, most patients experience difficulties in obtaining assistance from treatment supporters because the eligible ones refuse to come and accompany them to the clinic.

"Most people find it difficulties to get treatment supporters because those that are close to them refuses to come with them to the clinic." (CCKI)

"Yaa Sister, even those that are HIV negative are not willing to escort their relatives to this clinic because they fear to be seen coming here, people will suspect that they could be HIV positive." (NKI)

4.1.3. Discrimination

Discrimination in the community, as well as amongst family members, has contributed to impaired adherence due to emotional abuse, depression, isolation, rejection by partner as well as lack of family support.

♦ *Emotional abuse*

One of the participants complained that he was insulted by his wife's relatives and accused of transmitting HIV to her.

I was very annoyed when a school boy a relative to my wife insulted me and accused me of infecting my wife with the HIV…." (Employed male 36yrs).

♦ *Depression*

The initial reaction to the HIV test result led to shock and depression, one participant reported that she almost committed suicide and another said that she wished to die because of being teased by relatives because she was HIV positive.

"….when I found out that I was HIV positive I decided to commit suicide. I have just not managed because I cannot use my hands properly…." (Self-employed female 36yrs).

"…When people at home tease me because of my HIV status, I wish to die so that I can leave them in peace with their things…." (Unemployed female 40+yrs co-infected with TB)

♦*Isolation*

One participant claimed that people in the community keep a distance from him because of HIV related symptoms, and this makes him feel uncomfortable and rejected. Other participants reported being rejected and being blamed by relatives because they were HIV positive.

"In the community, people like me with skin problems suffer a lot, most people keep a distance thinking that if they accidentally touch me they will get my disease. I hear them whispering to

each other saying, 'what else could that be, if not AIDS,' referring to my skin problem…."
(Employed male 36yrs).

"One of my sisters has not accepted my HIV status, she blames me that I have done the biggest mistake of my life…" (Unemployed female 27yrs co-infected with other diseases).

The defaulters confirmed that some of their friends distanced themselves from them when they found out that they were HIV positive.

"…some of my friends are keeping a distance because they found out that I am HIV positive".
(Unemployed female 28yrs).

♦ *Rejection by partner*

Being HIV positive has contributed to mistreatment by partner and relatives resulting in patients defaulting treatment. One participant cited being left by her boyfriend the day she revealed her HIV status. Some relationships ended because of partners blaming each other.

"…My boyfriend left me the day I revealed my HIV status to him. Some of my friends are keeping a distance because they found out that I was HIV positive…" (Unemployed female 27yrs co-infected with other diseases).

"…In bed my girlfriend doesn't want me to touch her. We even sleep in separate beds now…."
(Employed male 36yrs).

"…the issue of being HIV positive brought problems between me and my husband, he was putting the blame on me…" (Unemployed Female 28yrs).

Some of the key-informants confirmed that mistreatment from spouses is common as most patients who defaulted complain of being neglected by a spouse or even being chased out of the house when their HIV status became known.

"Mistreatment from the spouse is very common. Some husbands tend to neglect their wives or even chase them from their houses if they find out that they are HIV infected, even if both of them are infected, this leads to depression and in turn to poor adherence. "(DKI)

" ...Just a day before yesterday a lady came looking for me crying and telling me that she stopped her treatment for a year hoping to die after her husband chased her out of the house, because of her HIV status and brought another women in the house,(staring at me she said) can you imagine?"(CCKI)

"...Yesterday I could just hear people arguing, saying:" *you mean you brought me to this clinic were people with HIV are being treated?" and a lady just stood up and left the clinic, leaving a young lady behind. I later found out that it was a mother who brought her daughter to the PRE-HAART clinic she was not aware what PRE-HAART stands for and immediately she found out, she just went away".* (NKI)

♦*Lack of family support*
The defaulters claimed they were disappointed with lack of family support since some of their family members kept their distance, which discouraged HIV positive persons to disclose their HIV status.

"...Some of my relatives and friends kept a distance when they heard that I was suffering from HIV, they no longer pay me a visit..." (Unemployed female 28yrs)

" I stayed in hospital for a month but nobody visited me, my relatives could come for shopping at the shops nearby the hospital, but who gives a damn to come and visit somebody that is suffering from AIDS?... (Unemployed Female 40+yrs co-infected with TB)

One of the participant's attributes her lack of adherence to poor family support, since the person who used to remind her to take her treatment went away and she had nobody else who could fulfill that role. This led to her not being faithful with her treatment.

"....Sister I have no children of my own and I don't have a house. I am living with my sister, her son was the only one who cared about me and was very much supportive, he was the one reminding me to take my medications but since he moved to the South, now I am in trouble. Nobody cares about me…" (Unemployed Female 40+yrs co-infected with TB)

All key-informants confirmed that many defaulters had poor support from their families and communities where they lived. According to the key-informants this was evidenced by those brought in by their relatives/friends to hospital and left alone at the clinic.

4.2 Patient-related factors

Individual factors relating to the patient, such as, poor understanding of the treatment regimen, forgetfulness, alcohol use, lack of commitment, personal beliefs, non-disclosure of HIV status, travelling and illiteracy influenced adherence, led to defaulting on ART in some cases.

4.2.1 Poor understanding of treatment regimen

Awareness of the importance of adherence as well as knowledge of the consequences of poor adherence, contributed to participants defaulting their treatment.

♦*Awareness of the importance of adherence*

Lack of understanding of the importance of treatment adherence contributed to patients dropping the treatment when they were feeling better. Participants reported they stopped taking treatment after they started feeling better.

"When I started taking the ARTs, I only took them for a week or more then I threw them away since I started feeling better. I thought it was no longer necessary to take them…" (Employed male 36yrs).

One of the key-informants was of the opinion that some patients had poor knowledge about the HIV infection including the importance of treatment adherence, and that this is the reason why they just stop taking treatment any time they feel like doing so.

"Sister, most people still have poor knowledge about the HIV infection therefore they just drop the medicine any time they feel like". (Pharmacist assistant key informant (PAKI))

♦ *Knowledge of consequences of poor adherence*

Some participants agreed that they did not have sufficient knowledge about the importance of taking medications on a regular basis. They reported discontinuing ART after experiencing side-effects. They also cited medications not well explained to them; thus leading to poor adherence.

"....At first the medications were not well explained to me. I think I did not understand everything. That is why when they made me feel sick, I stopped taking them…" (Employed Male 36yrs co-infected with TB)

"...I don't know exactly after how many hours I am not supposed to take the medicines after I forgot to take them at the right time……my friends told me that if I don't take those medications exactly the time I am supposed to take them and take them at a later stage the pills will kill me…" (Employed Male 36yrs co-infected with TB)

One of the key-informants confirmed that although HIV and PRE-HAART counseling is provided to ill patients on admission, their relatives often do not ensure that post-discharge counseling is sought. This results in patients often not understanding the need to continue with treatment even if and when they feel better.

"People who become very ill and end up being admitted in hospital and whose treatment is initiated while in hospital, HIV as well as PRE-HAART counseling is done to their relatives when they get better, most of the times their relatives don't take them for counseling therefore their understanding remains very poor." (CCKI)

♦*Leftover pills*

According to one of the key- informants, patients ignore their follow-up dates and continue taking left over medications. Two pills are given in excess at the pharmacy every month, patients keep and take them and ignore their follow-up dates.

"...2 tablets are given in excess every month at the pharmacy. Some just continue taking those tablets and ignore their follow-up date." (PAKI)

"...I missed my follow-up because I was taking my left over pills while waiting to get money for transport. The problem comes when my medicine gets finished without me getting money for transport ..." (Unemployed Male 30yrs).

"...I had to travel to Windhoek urgently hoping not to stay for long. After all I had some left over pills, I was not worried but unfortunately I overstayed. My pills got finished and I also missed my appointment date..." (Unemployed female 27yrs co-infected with other diseases).

4.2.2 Forgetfulness

An overwhelming number of participants cited forgetfulness as a factor that contributed to poor adherence to medications especially when doing other tasks. Concentrating on work tasks contributed to forgetting to take medication at the prescribed times. One of the participants who has defaulted several times and whose treatment has been temporarily stopped and sent for adherence counseling, claimed that forgetfulness was normal and she felt that she should not be blamed or punished because of it.

♦*Reminder of drug intake*
"...when I am busy doing other things I forget about the medications..." (Employed Male 36yrs).

"...At work when I get preoccupied most of the times I forget to take my treatment, when I remember it is too late..." (Employed Male 36yrs co-infected with TB).

"...sometimes I just forget and I think it is normal for somebody to forget..." (Unemployed female 27yrs co-infected with other diseases).

4.2.3 Alcohol use

Some of the participants mentioned that using alcohol was a barrier to treatment adherence because alcohol contributes to their lack of memory. Participants also reported that work related exposure contributed to alcohol use which in turn led to treatment defaulting.

♦ *Difficulties to stop using alcohol*

One of the defaulters claimed to have been a heavy drinker before starting ARVs and is finding it very challenging to stop drinking.

"…I was a true drinker. It is such a big challenge to stop taking alcohol…" (Unemployed Male 40yrs).

♦*Lack of memory*

Alcohol intoxication impairs memory and leads to forgetfulness or ignorance of the time to take medications. This is confirmed by one of the participants in the current study who claims to be more forgetful after he consumes alcohol.

"Sister having some few drinks with friends or alone makes me forget about taking my medications, -even if I am carrying them with me. I only remember the next day…" (Employed Male 36yrs).

♦ *Exposure*

Some participants cited finding it difficult to stop using alcohol because of peer influence. In addition bar attendants who are on ARVs also face challenges in avoiding alcohol when customers buy alcohol for them.

"…when I go to bars with friends just to have one beer I forget about the medications. I only remember when I am at home but the time might be over to take them." (Employed male 36yrs,)

"I work in a bar, most of the times I am tempted to take some alcohol and forget to take my pills…" (Employed Female 37yrs co-infected with TB).

4.2.4 Lack of commitment

Lack of commitment to ART has contributed to poor adherence. This is evident in some participants failing to take their treatment because of networking and peer-group influence. Some simply lacked self-motivation.

♦*Networking*

One of the participants reported that just thinking about socializing with friends as well as actively socializing often results in defaulting.

"I like to enjoy with friends, when I go out with them hoping not to stay for long I find myself spending the whole day or even a weekend without taking my pills…" (Unemployed Female 27yrs co-infected with other diseases).

♦*Peer group influence*

Peer group influence is reported to have affected one of the participant's decision-making who said that he agreed with a friend not to go back for ARTs until they have fallen sick.

"I only went for HIV test when my best friend Titus requested me to escort him to the clinic to do an HIV test. My friend Titus also just decided to go because his girlfriend was forcing him to do the test, otherwise I thought it was not necessary because I was not sick…….. we were found to be HIV positive, then we agreed not to go back for ARTs until we become sick…….when I started treatment, I stopped treatment when I started feeling better." (Employed Male 36yrs)

♦ *Lack of motivation*

Most of the participants defaulted on their treatment because of lack of motivation. For example those who misplaced their health passport did not inform the health-workers of the problem but instead waited for the misplaced item to be found at some stage.

"...I defaulted for two months because my baby was admitted in ward 10 and a lady whose child was also admitted in the some ward and room with my child and whose baby was discharged earlier than mine she had mistaken her bag with mine and left with my bag where I placed my health passport...there is nothing I could do". (Unemployed Female 28yrs).

4.2.5 Travelling

Participants' who travel a lot reported that unplanned travelling contributed to treatment defaulting and poor adherence.

♦*Unplanned travelling*

Participants are faced with challenges such as unplanned travelling with friends or even work related commuting. This was supported by one of the key-informants who said that the defaulters reported that when traveling they sometimes forget their medications at home leading to treatment defaulting.

"...most of the times at work they just sent us to go and work outside this area and stay there for two days without telling one to prepare himself and they don't give you the opportunity to go home and get your medications, this makes it impossible for me to take my tablets for those days and if one was supposed to go for follow-up then one has to miss that appointment...." (Employed Male 46+yrs co-infected with MDR).

"... Clients give several excuses of going to attend funerals or of travelling ....." (DKI).

4.2.6 Illiteracy

Some of the defaulters indicated that they cannot read the instructions in their health passports and are unable to remember what has been said to them by the health-workers. Instead they depend on those who live with them who in turn tell them to wait until they run out of medication while waiting for the next appointment date. This also contributed them to missing their appointments and being poor adherents.

"....Sister I don't know how to read and write. I depend on other people as to what time it is so that I can take my medications and to ask them to tell me when my follow-up date is. And guess what…most of the times I get wrong answers, I am told wrong follow-up dates, and when I come to the clinic it is either too soon to come or too late. The nurses are always mad at me but what can I do?" (Unemployed Female 40+yrs co-infected with TB)

"…I think those that I am living with and claim to know how to read and write are also just like me," illiterate," how come they always tell me wrong dates?…" (Employed Male 46+yrs co-infected with MDR)

Participants who said that they did not have any formal education reported to experience problems in acquisition of knowledge on ARTs and they could not understand when instructions were given in the formal language which is English. They also indicated to have faced problem from instructions given in the languages known to them. According to the participants they needed instructions' to be repeated to them several times before they could grasp what has been said.

"....the mistake is mine, I don't grasp things easily, one should tell me several times for me to be able to understand. Even the medication they are giving me, I don't know really how to take them. I cannot read and write…" (Unemployed Female 40+yrs co-infected with TB)

"…I started ARTs in Walvis Bay. In Walvis Bay most people don't speak Oshiwambo. Therefore the nurse was speaking in English and I don't understand a word in English. The one I went with to translate for me, she couldn't clarify every question that I was asking her. I think she also doesn't understand everything…" (Employed Female 37yrs co-infected with TB)

4.3. Health service factors

Participants cited various health system factors that were negatively affecting adherence, namely: long distance to health facility, shortage of staff at the clinic, poor patient-health provider relationship and the attitudes of health providers.

4.3.1 Long distances to health facility

♦*Transport cost*

Most participants highlighted that they come from very far. They cited distance to the clinic and not having money for transport as a key problem to adhering to follow-up appointments.

"…I don't have a job and I travel as far as from Okahao to get my medicines. Most of the times I don't have money for transport but once in a while my friends as well as my family, when they have money they help me out…" (Unemployed Male 30yrs).

".…...The distance to the clinic is very long for some clients, for example people coming from Uvudhiya which is more than 60km away from Oshakati and this is the only nearest Hospital that is providing ARVs…."(PAKI).

4.3.2 Shortage of staff at clinics

Most of the defaulters highlighted overcrowding at the clinic to have contributed to some of the participants leaving the clinic without being attended to, due to other commitments. They complained about the noise at the clinic that makes it difficult to hear their names when called by HCPs. This contributed to being attended to very late and eventually leaving without medications.

"I do afternoon shifts until midnight and because of the delay at the clinic most of the times I go to work late and very exhausted because there is no time to rest… because this clinic is always very full". (Employed Male 46+yrs co-infected MDR)

".....people make noise at the clinic and if one tells them to keep quiet, they will ask you if you don't have ears and worse enough the nurses call our names in a very low tone, if you don't answer they will put our health passport aside and call you only when everybody else is done…" (Unemployed Male 39yrs co-infected with TB).

"This clinic is most of the times overcrowded every day, it is a very busy clinic some people work and when they find the clinic very busy they get very much discouraged to join the queues, and they might fail to find a suitable time to come back…… Therefore people who work end up dropping the medications and only come back when they are feeling very sick."(NKI)

♦ *Lack of order*

The majority of participants listed lack of order at the clinic to have contributed to disorganization, since young people who come late to the clinic squeeze themselves in front of elderly people who come very early to the clinic. Therefore those who come very early are seen last by the doctor and end up leaving without treatment because by the time they reach the pharmacy it is too late and the pharmacy is closed.

"….there should be some order at the clinic, the youngster's squeeze themselves in front and then end up being attended to first… a security guard should be allocated to the clinic to put up some order….people that come late insert their health passports under those belonging to the people who come first and they end up being treated first…" (Employed Female 36yrs).

"…at the reception, there is just no control or order we are told to put our health passports in a box to be collected later by the nurses but most of the times those that come early end up being treated last…"(Employed Male 36yrs co-infected TB).

"….most people who come from very far and who could have come early to this clinic end up being treated last and living without their treatment because when you reach the pharmacy you will find it closed that has happened to me several times…." (Employed Male 36yrs).

♦*Long waiting time*

A few defaulters raised complaints about long queues at the clinic. The waiting times were very long and contributed to them becoming frustrated and eventually defaulting their treatment.

"…. I wonder if it is not possible for this clinic to open during lunch hours this place is always very crowded…" (Employed Male 36yrs co-infected TB).

"...most of the times one leaves this clinic feeling very sad ... why don't they employ more nurses?" (Self-employed Female 36yrs)

"... This clinic is always very full, it is really discouraging...people working at the clinic are very slow, I would like them to change their speed, because of their speed you will find the pharmacy closed that has happened to me several times...." (Employed Male 46+yrs co-infected MDR)

"......The waiting time is too long Sister, starting at the reception; this is all because of the number of patients attending the clinic....."(CCKI)

"....It is really discouraging because a client coming for follow-up has to spend the whole day at the clinic ....really something needs to be done to minimize the time of stay at the clinic." (DKI)

According to one of the participants the issue about long queues at the health facility was demotivating and has contributed to his defaulting behavior.

"My God... I get so much discouraged when I entered this door and saw such long queues" (Unemployed Female 27yrs Co-Infected with other diseases).

"....Sister (Referring to the researcher) the queues in the clinic are too long and also many, one may need to join the queue to the doctor's consulting room, to the blood room as well as to the pharmacy, if somebody is in a hurry then it is just impossible," (PAKI).

"...The hospital staff has requested if possible to be provided with a separate box where they can put their Health passports and have a different queue, we are still looking into that." (CCKI)

4.3.3 Poor patient-health provider relationship

Although participants reported to be generally satisfied with the quality of care at the health service facility, some reported that the patient-health provider relationship was characterized by lack of empathy, lack of trust and negative attitudes of HCPs

♦ *Lack of empathy*

Some defaulters reported HCPs' attitudes to be unfriendly, not very helpful and they do not pay attention to their problems, which contributed to them being non-adherent to their treatment.

"At the pharmacy even if the doctor prescribes medications enough for two months they refused to give all of them. They will tell you to come next month…" (Unemployed Male 40yrs).

"...I asked the doctors several times to give me a transfer later to the nearby clinic but they are taking too long. Imagine it's now a year that I am struggling to get that letter…." (Unemployed Female 28yrs)

It is so discouraging coming for follow-up visits because the doctor doesn't pay attention to the other problems that I am having. Look at my skin; I keep complaining about it but he just ignores me. He doesn't even refer me to other doctors. He just tells me to go to the pharmacy to get ARTs…" (Employed Male 36yrs).

"….the health care providers should put more emphasis on giving health education and encouraging us to live a positive life and refrain from criticizing us…" (Employed Male 39yrs co-infected with TB).

♦ *Lack of trust*

According to some participants, the negative client-provider relationship contributed to lack of trust and eventually influenced the adherence of patients negatively. Participants reported some HCPs do not pay attention to what they are telling them and cited doctors and nurses giving them unpleasant answers.

"I find the service at this clinic not good because the service providers don't listen to what one is asking or telling them. Instead they reply saying that it seems I know it all...." (Employed Male 36yrs).

"Doctors and nurses don't understand my problems they always think I am laying when I am telling them the problems I am having that cause me to default...' (Unemployed Female 28yrs).

In addition, the key-informants reported that some defaulters leave the clinic when they encounter nurses known to them at the clinic.

"The clients that are from our areas if they find us here they just disappear without treatment and perhaps don't come back anymore until they are very sick, "(NKI)

4.3.4 Negative attitudes of health providers

Most defaulters were dissatisfied by the negative attitudes of the nurses. Those who default their treatment feared to go back to the clinic. Defaulters cited nurses and doctors being very rude to them and these negative attitudes of the HCPs are demotivating thus contributing to non-adherent behavior.

"...some of the nurses and doctors at the clinic are very rude; the way they talk to us is not good it makes me feel very unwelcome….....When I defaulted my treatment I became extremely scared I feared this rude nurses, it is my family who brought me back when I became sick...." (Unemployed Female 27yrs co-infected with other diseases).

"...Sometimes at the pharmacy they give us wrong treatment but when we ask them they give us unpleasant answers..." (Employed Male 36yrs co-infected with TB).

"The health providers should just reframe from criticizing us..." (Unemployed Male 39yrs).

52

"...some health workers have sharp tongues, they answer us in a very rude manner when we are asking for directions or just something..." (Self- employed female 36yrs).

4.4. Socio-economic factors

Socio-economic factors that have emerged from the study and negatively affected adherence were: unemployment, lack of transport and floods.

4.4.1 Unemployment

Unemployment was a key factor that caused defaulting on treatment among some participants. It contributed to some participants not being able to afford buying food to take with medication. Factors such as lack of transport money and work related migration also contributed to poor adherence.

♦ *Lack of food*

"...I am not employed, my family depends on me only and on our millet field but sometimes the rainfalls is poor and I just don't have enough food to take those pills and also don't have money to buy food or to go to for follow-up visits..." (Unemployed Male 39yrs co-infected with TB).

" "...I am unemployed my husband is unemployed and I have children as well as my brothers and sisters to take care of, it is difficult to get enough food to take this pills and to have money for transport to go for follow-up visits..." (Unemployed Female 28yrs).
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"...sister I asked for assistance from the CDC staff to assist me with food but they say they don't do so, I also approached one of the non-governmental organizations for food assistance but they also said that they don't provide food…… When I don't have enough food and take both medications for TB and ARVs I feel very nauseated…therefore sometimes I don't take the treatment" (Unemployed Male 39yrs co-infected with TB).

"yah, poverty is a big problem and I am certain about that, when we used to go for field work with sister Diana (not the real name) during 1998, 1999, 2001, 2002, 2003 and 2004 you could enter a house hold and if you just enter like this, you really see that there is nothing in the house and you truly wonder how this people are surviving. (CCKI)

"Some clients who have defaulted tell you that they don't have enough food and if they take the medicine on an empty stomach they don't feel well."(PAKI)

An overwhelming number of the defaulters claimed to default their treatment because of not having transport money. Participants cited failing to go for follow-ups visits and to collect their medications from the clinic because of lack of transport money. On the other hand, lack of transport money did not prevent some patients from coming for their treatment as one defaulter reported that most of the time he was given transport money by friends and relatives.

"...most of the times I don't have transport money and I thank the hospital for providing this service for free because before they started doing so I used to suffer very much..." (Unemployed Male 39yrs co-infected with TB)

"Sometimes they just tell you that they don't have transport money ..." (DKI)

♦ **Work-related migration**
Some of the defaulters claim they could not find employment in Namibia and ended up working in a neighboring country, such as Angola, hence they cannot afford to return regularly for monthly follow-ups.

"Some of us failed to get employment here, I got a job in Angola and coming over so frequently is not always possible..." (Employed Male 36 yrs.).

"... I work in Angola and at work it is compulsory for me to stay there for two months to be given day-offs, this makes life difficult because I am supposed to come for follow-ups every month..." (Employed Male 46+yrs co-infected MDR).

4.4.2 Unavailability of transport

Defaulters from villages far away from Oshakati (the town where CDC is located) reported it was difficult finding transport to the hospital. There is no public transport and very few people own cars in their villages. Thus they have to rely on other villagers who own vehicles to transport them to hospital.

♦ *Inability to go for follow-ups*

"Sister at our village there is just one Car that comes to Oshakati (the town where CDC is located) if the car breaks down what can I do? And the car only comes once a week, definitely I will miss my appointment." (Employed Male 36yrs co-infected with TB).

.*"There are very few transport vehicles coming from some villages perhaps once per week and if there is a car coming here then everyone in the village is supposed to know or otherwise one may end up missing it." Now imagine what happens when that car is broken or if the owner has just decided not to go to town for a longer period?"* (NKI).

♦ *Floods*

Most participants cited floods as having contributed to them not being able to access the health facilities leading to them defaulting treatment. When it rains most of the villages in the Oshana Region, where the study was conducted, become encircled by the flood waters making it completely impossible to reach or leave those areas.

"When it rains there is no way I can get out of our area because it is surrounded by waters, but when I tell these doctors they think I am lying." (Employed Female 37yrs co-infected with TB).

....”During the raining seasons most of the places in the region are surrounded by rain waters making it difficult for those living at those areas to come for their follow-ups, you know floods are very common her in the North….. Therefore most of them have to wait until the water level goes down or dry up so that they can come for their treatment.” (NKI)

“……We sometimes reach those places with an helicopter that is being utilized for PHC services but for the past two years we have not done so, we don't carry outreach services, we don't even have enough staff or transport to carry out such services.” (NKI)

4.5. Work place factors

Participants mentioned work related pressure and their respective employer's lack of support as hindering factors for good adherence. Patients do not disclose their HIV status for fear of losing their jobs. On the other hand those that disclosed their status faced challenges of having to choose between work and going to hospital since their employers most of the times will not let them leave work.
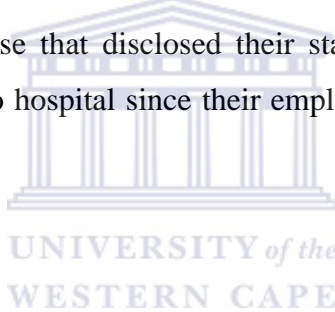
4.5.1 Work related pressure

♦ *Losing jobs*

Participants claim to be challenged by work related pressure, such as discrimination and fear of losing their jobs. The defaulters felt that disclosing their HIV status to their employers and colleagues might contribute to discrimination in the work place.

“……my boss is not aware about my HIV status. This makes things more difficult because he will not understand why I should go to hospital every month. I fear to tell him because maybe he is going to fire me....” (Employed Male 36yrs co-infected with TB).

“Those that are working did not disclose their HIV status to their bosses. Not disclosing makes it difficult for them to tell their bosses every month that they are going to hospital.” (DKI)

According to some of the participants, although their employers are aware of their HIV status life is difficult for them, because their employers make them to choose between their job and treatment.

"...my boss told me several times that if I want to go for my treatment I should quit this job, I cannot do that Sister I am the only bread winner for my family..." (Employed Male 46+yrs co-infected MDR).

Some of the defaulters claim to be willing to go for their treatment but because of the fear of losing their jobs or to have money deducted from their salaries they find it difficult to adhere to their treatment.

"....when I go to hospital and fail to turn up at work my boss deducts money from my salary. (Employed Male 36yrs)

"...If there is shortage at work i just have to go to work and miss my follow-up date, my boss only allows me to go when there is no shortage at work..." (Employed Male 46yrs co-infected with TB).

One of the key-informants verified that some of the defaulters reported about their willingness to go for follow-ups and about their bosses not letting them.

"Those that are working will tell you that it is not easy to leave their work to come to the hospital, most clients are willing to come to the clinic but their bosses will not let them."(DKI)

4.5.2 Lack of support from employers

Participants cited lack of encouragement from their bosses and work related travel as factors that affected non-adherence. Participants reported their bosses did not encourage them to take their treatment and some made them to be disqualified from being given ARTs because they followed

them to the clinic and forced them to leave the clinic unattended which contributed to poor adherence.

♦*Encouragement*

".....I have not been on ARVs for a very long time because my boss just turned up at the clinic and he was quarrelling and demanding that he wants to see "me" Markus Simon he made me to be disqualified I left the place without being attended to because he refused to listen to what the nurses had to tell him and the counselors wrote in my health passport that I am not qualified to be given ARTs...." (Employed Male 36yrs).

"...my boss is somebody who doesn't understand his employee's problems, what matters to him is only his work..." (Employed Male 46+yrs co-infected with MDR).

One of the key-informants reported to have experienced employers following their employees to the clinic and making them leave the clinic without being attended to.

"My dear, I have come across employers coming to our clinic to ask the doctor what is wrong with their employees, because they themselves are not free to tell, I have also come across those who lose their jobs after their bosses found out that they were HIV positive."(NKI*)*

Although participants reported to be generally dissatisfied with the way their employees are treating them, some reported that they had not experienced problems taking their tablets at work.

"...I don't have a problem taking my pills at work the only problem is just that it is not easy to go to the clinic for follow-up visits or for my treatment......" (Employed Male 37yrs co-infected with TB).

4.6. Treatment related factors

Some defaulters cited treatment side-effects, treatment fatigue as well as complexity of the treatment process as hindering factors for good adherence.

4.6.1 Adverse Drug Reaction

♦ *Side-effects*

Some participants reported discontinuing medications as a result of adverse drug effects such as vomiting, nausea, mental confusion and skin rashes.

"....vomiting makes me not to take my medications sometimes..." (Unemployed Male 30yrs).

Sister I had to stop those treatment cause I felt I was going crazy, when I lie down I fell as if all the objects are falling on top of me (she lifted her hand and made circular movements with her finger and said :) actually my head was spinning, therefore I dropped both treatment for TB and those for HIV." (Employed Female 37yrs co-infected with TB)

"... When I don't have enough food and take both medications for TB and ARVs I feel very nauseated..." (Employed Male 46+yrs co-infected with MDR)

"....the medications make me feel dizzy..." (Unemployed Female 28yrs).

"Some of the clients have stopped taking the medications because of the drugs negative effects." (DKI)

4.6.2 Treatment fatigue

♦ *Pill burden*

Participants reported pill burden to negatively influence adherence as participants who are on combined treatment said they are tired of treatment.

"...I always force myself to take those tablets....sometimes I just feel tired to take those pills imagine taking both TB and those for HIV?" (Employed co-infected with TB Male 36yrs)

"I take two treatments for TB as well as ARTs the pills are big, I always get the feeling that they are going to get stuck in my throat, I have to always force myself to take them…" (Employed Male 39yrs co-infected with TB)

In conclusion the chapter highlights the findings of the study. Six major themes and various sub-themes were identified from the study as key factors that contributed to poor ART adherence. The next chapter discusses the findings of the study.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter presents the discussion of the study findings together with reference to relevant literature. The discussion centers on the factors that emerged from the interviews with key-informants as well as from the in-depth interviews with the defaulters. Factors identified include: social, patient, health service, socio-economic, unplanned ART interruptions, work as well as treatment related factors.

5.2 Faith in healing

This study found that some participants stopped taking their medications because of religious beliefs and influences. Although, according to Parsons *et al*. (2006), the literature suggests that church attendants and spiritual believers are more likely to adhere to treatment. However some religious beliefs can have a negative impact on adherence due to stigma associate with HIV/AIDS. The findings of an exploratory study, conducted amongst HIV individual in the Southern State, to find out about patients attitudes and beliefs surrounding HIV infection and adherence to treatment, revealed that even though certain religious practices are positively associated with adherence there are certain religious beliefs that affect adherence negatively (Ware *et al*. 2009). According to Ware *et al*. (2009) conflicting messages from religious authorities and health-care practitioners may also interfere with adherence. However, it is equally important for HCPs to have a better understanding of patients' religious beliefs that may have a negative influence on adherence in order to develop adherence strategies that will benefit their clients.

5.3 Traditional therapies

Oshakati town, where CDC is located and where the study was conducted, is surrounded by many villages where people are still loyal to their cultural and traditions beliefs. According to Ware *et al*. (2009) cultural and social obstacles threaten treatment adherence. In the current study, it emerged that some ARVs defaulters where convinced and believed that they were bewitched or that their disease could only be treated with traditional medicine. They admitted to having stopped their treatment and to have sought help from traditional healers. According to Rowe *et al*. (2005) some traditional healers claim to cure HIV and many people have fallen prey

to such claims because orthodox HIV treatment only slows the progress of the disease and does not cure it. This has consequently contributed to patients abandoning their treatment or combining it with traditional medicines causing interference in drug levels. Some participants in the current study stopped their medications after consulting traditional healers because of the belief that traditional medicine cannot be mixed with western medications. Peltzer, Friend-du-Preez, Ramlagan and Anderson (2010) indicated that using herbal medicines for HIV was associated with lower adherence.

According to a study conducted, at the ThembaLethu Clinic at Hellen Joseph in Johannesburg, on patients who missed follow-up appointments, it was found that a decision to try traditional medicine was one of the reasons given for non-adherence (Maskew, MacPhil, Menezes & Rubel, 2007). Another study conducted in a district hospital in KwaZulu-Natal, South Africa, found similar results: most of the defaulters cited that they were cursed and could only be treated by traditional healers (Govender & Marsh, 2009). Convening to WHO (2006), beliefs that people have been bewitched, afflicted by an AIDS devil/spirit, or had a spell cast on them are known to have a negative influence on adherence. In a study done in Botswana by Weiser *et al*. (2003) 47% of the patients interviewed acknowledged the use of traditional remedies for HIV infection and 21% anticipated visiting a traditional healer in the future for treatment the disease. It is therefore important for HCPs to have some understanding of their clients' cultural backgrounds that might have an influence on treatment defaulting. There might be a need for collaboration between traditional as well as western medicine to enable patients to completely adhere to their treatment. A study done in Burkina Faso demonstrated positive outcomes on adherence when traditional healers were involved in the management of certain diseases (Sanou *et al*., 2004). It is suggested that health-workers recognizing patients' social or physical environment since HCPs and patients come from a variety of cultural backgrounds with different beliefs it is important to understand those beliefs that might affect treatment adherence (Senelgroove, 2006).

5.4 Influences of stigma and discrimination

An HIV/AIDS diagnosis is believed to contribute to stigmatization and discrimination among some HIV patients. The stigma surrounding AIDS is primarily caused by poor knowledge, fear of disease and death, sexual behaviours, as well as poor acknowledgement of stigma (Theron,

2005). The issue of HIV stigmatization still remains a major problem (WHO, 2006). According to the findings in this study some of the participants interviewed admitted to not disclosing their HIV status for fear of discrimination and rejection. According to Ware *et al*. (2009) stigma is feared because it contributes to social isolation and affects relationships that are essential for survival. Conferring to Nachega, Mills and Schechter (2010), a systematic review in developing countries indicated non-disclosure to loved ones or fear of being stigmatized to be the most important and common factor contributing negatively to adherence. In a study conducted in Botswana that aimed to elicit principal barriers to adherence it was found that 69% of the respondents claim not to have disclosed their HIV status to their family members because they feared being ostracized, rejected, or a break-up of their marriages, and 94% kept their HIV status a secret from the community. Amongst the participants 15% reported stigma as a barrier to adherence (Weiser *et al*., 2003). According to one of the participants in the current study her relatives refused to eat her food when they found out about her HIV status. They told their children to not to eat her food or even touch it. This finding is in line with those reported by Ware *et al*. (2009), namely, when a set of friends found out about a patient's HIV/AIDS status everybody withdrew from eating from the same food container as him.

The study findings also show that some participants failed to take their treatment in the presence of friends or to discuss their illness with families and neighbors for fear of what others might say and suspect. These findings are in line with what is reported by Ware *et al*. (2009), namely that if patients are seen taking ART by family members, neighbors, or friends, this is likely to convey a signal that they are HIV positive and living with AIDS. The reason given by patients for not taking medications is because they are not comfortable taking them in front of friends, families, and co-workers (Ware *et al*., 2009). Stigma and fear to disclose their HIV status both contribute to patients skipping their doses if privacy is unavailable at a scheduled dosing time. This leads to attempts to hide the medication and to change dosing schedules which contribute to non-adherence (Klitzman *et al*., 2004).

Findings from the study also indicate that some participants travel long distances to go to health facilities far from their area where they are not known, and some leave the clinic unattended when they find someone known to them in the clinic. According to Theron (2005) many

educators infected by HIV choose to relocate once they become visibly ill or they simply disappear leaving classes without educators. The problem of stigma and negative attitudes in the family and community settings raised in this study is supported by Mills *et al*. (2006) who reported that 34 qualitative studies in developed countries, as well as two qualitative studies in developing countries, recorded individual themes of barriers to treatment adherence; these include fear of disclosure and waiting to avoid taking medications in public places. Stigma and discrimination reported in the community, within the hospital setting, and even among the family members, are regarded as a matter of concern since these led to some patients to pursue HIV treatment at distant clinics resulting in lack of family and social support.

5.5 Lack of family/social support

The negative influence that social support has on ART adherence as shown in this current study has been well documented (Remien *et al*., 2002; Weiser *et al*., 2003). Some participants reported that the behavior of community members, as well as family members, changed towards them when they found out about their HIV status. Difficult family circumstances in South Africa are reported to have contributed to high rates of migration, teenage pregnancy, overcrowded living conditions, family violence, and substance abuse. These are factors that are likely to create conditions under which family and social support are poor which in turn contribute to compromised adherence rates (Wood, Tobias & McCree, 2004; Koopman *et al*., 2006). On the other hand this study also found that some participants did receive support from their friends and families. According to Nachega, Mills and Schechter (2010) qualitative studies conducted in South Africa examining social support networks and relationship indicated patient support to be very important to treatment adherence. Research studies conducted in Nigeria, Tanzania, and Uganda, also demonstrated that social relationships are particularly important in treatment adherence.

5.6 Poor understanding/knowledge

The current study identified that poor knowledge, or a lack thereof, about ART as being a leading factor that contributed to treatment defaulting. Some of the defaulters interviewed in this study reported to have defaulted after they felt better; they thought that they need to only take

medications when they were not feeling well. According to Ware *et al*. (2009), behavioral obstacles, such as stopping drugs when symptoms disappeared, have been reported in studies done in Sub-Saharan regions as well as elsewhere. Similar trends were noticed in Botswana, by Weiser *et al*. (2003), where 8% of the patients stopped treatment as soon as their symptoms disappeared. Some participants do not know exactly at what time the medicines are supposed to be taken and therefore, do not take their drugs at the prescribed times. Some only take the drugs once they start feeling sick because they do not know the importance of uninterrupted treatment while others claim that the instructions are not clear; such actions leads to inappropriate use of the drugs. According to Mills *et al*. (2006) some patients missed their treatment simply because they did not understand the instructions. The findings in this current study clearly indicate that the instructions regarding when to take and not take the pills are not well communicated. This clearly indicates that there is lack of adequate communication with the patients during their visits at the health facility. These findings are consistent with studies done in Malaysia, Gambia and Ethiopia in terms of poor knowledge about the length of treatment contributing to treatment defaulting because due to poor health worker/patient relationship it was found that patients were not informed about the duration of the treatment (Tekle, 2002). Therefore personal factors are often reinforced and influenced by the health-workers. Failure to communicate adequately with the patients leads to poor knowledge and eventually to non-adherence to treatment. The findings of a study done by Hasker *et al*. (2010) underscore that poor communication between patients and health providers contributed to patients defaulting their treatment when they started feeling well or when they did not see any improvement in their health. According to these authors treatment defaulters lack knowledge about their disease. The above mentioned findings are supported by Ley's theory that indicates that compliance can be predicted by a combination of a patient's satisfaction with the consultation process and understanding of the information provided as well as recall of this information (Olivera, 2009). Therefore, health-workers should utilize this model by following Ley's 1989 suggestion that the level of understanding and accuracy of recalled of information may be improved if it is ensured that patients understand and are able to recall the information given to them. This can be achieved by: giving information in a simple way; repeating the important aspects; being specific; putting emphasis on the importance of compliance; making sure that patients remember the first part of the message; scheduling additional follow-up interviews (Olivera, 2009).

5.7 Impact of alcohol use on treatment adherence

Alcohol abuse is a factor that hinders adherence in terms of the findings of this study. Some participants cited alcohol intake as causing them to forget to take their medications. According to a systematic review conducted by Nachega, Mills and Schecheter (2010) alcohol intake was amongst the factors reported to negatively impact on adherence in developing countries. More recent studies of patients who were receiving multidrug regimens suggest that use of alcohol is associated with non-adherence (Gifford *et al*., 2000). Jaiswal *et al*. (2003) indicate that TB patients who abuse alcohol do not collect their treatment regularly as compared to those who are teetotalers. Consuming alcohol when on treatment may have devastating effects on a patient's mental stability, such as contributing to either forgetting to take the treatment or influencing the effectiveness of the prescribed medications that are being taken (Cramm, Finkenflugel, Moller & Nieboer, 2010) The above mentioned findings support Ley's model of compliance that indicates that mental instability negatively influences a patient's ability to recall the information which contributes to non-adherence (Ogden, 2000).
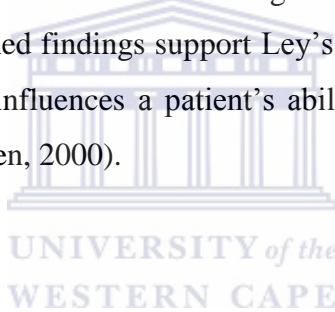
5.8 Illiteracy

One of the critical issues that emerged from the study is poor literacy. Some of the participants claim to be completely illiterate while most of them have very low levels of education and cannot communicate in English (the official language in Namibia). They therefore lacked the ability to read the instructions given by the HCPs which in turn contributed to them not adhering to treatment or to follow-up appointments. These findings are in line with those from a cohort study by Golin *et al*. (cited by Paasche-Orlow *et al*., 2006), who followed patients on a new ART regimen for 48 weeks and reported low health literacy to be associated with poor knowledge of the regime and they concluded that low health literacy was a barrier to adherence early in the course of treatment. According to Bosworth and Oddone (2002) a large percentage of patients, particularly the elderly, do not understand directions. A cross-sectional study done in the USA reported that the proportion of Americans who read the least were 16% of those e between 45-54 years old, 26% for those between 55-64 years, and 44% of those who are 65 and above. In terms

of health issues it was found that 26% were unable to understand information pertaining to next scheduled appointments (Bosworth & Oddone, 2002).

Low literacy in patients is associated with inadequate disease related knowledge and self-management, the worse self-reported health status, and poor treatment adherence (Peltzer *et al.*, 2010; Powell & Kripalani, 2005). These authors consider physicians to overestimate their patients' literacy levels despite ample evidence that they may also not consider limited literacy skills as factors in patient care. This study's finding justifies the need for improved communication skills between the HCPs and their patients in terms of Ley's model of compliance which considers patients understanding to be the cornerstone of the patient's ability to adhere to treatment (WHO, 2003). HCPs should make sure that their patients are clear about the timing of the treatment instructions and all the aspects involved in their treatment (Munro *et al*., 2007a).

5.9 Influence of poor relationship between health-workers and patients

A good relationship between health- workers and their patients is extremely important given that a poor relationship can negatively affect adherence. For instance, in the current study some patients become too scared to return to the health facilities when they missed appointments or fail to take their drugs correctly, for fear of the health-workers' reactions. A review by Munro *et al*. (2007a) and a study by Hasker *et al*. (2010) indicate that reasons associated with defaulting include the poor attitudes of health-care workers, such as scolding the patients for missing appointments and/or refusing to give defaulters more medications. However in the current study some participants had no problem with the HCPs and were happy about the service provided at the health center. These findings are in line with those reported by Weiser *et al*. (2003) in a study conducted in Botswana, namely that 96% of the patients cited that their providers treated them with respect and dignity. Interpersonal relationship can positively or negatively affect adherence behaviors. According to Mills *et al*. (2006) positive interpersonal relationships between HCPs were reported in 17 studies as facilitating and necessary for successful adherence. However negative attitudes of HCPs can cause patients to not use a clinic which would then compromise the quality of care they are entitled to receive.

5.10 Barriers of accessibility to treatment

Some participants in the current study raised concerns about having to cover long distances to the health facility especially since there is lack of public transport. Long distances to facilities that provide ARVs remains a crucial issue to ARV defaulting. According to Nakinyemba, Kweza and Akurut, (2004) in Uganda, distance, transport, and finance, were found to be barriers to adherence. Some participants reported travelling 50-130 kilometres (kms) or having to cross rivers in order to access the health services. A study in Addis Ababa found that patients walked for up to two hours before reaching the nearest health facility (Demisse, Lindhtjorn & Berhane, 2002). In this study participants claim to have defaulted treatment because of floods that are common in the area during raining seasons. According to Veenstra, Whiteside, Laloo and Gibbs (2010) in Southern Africa there are a huge range of different crises that can potentially undermine ART treatment. For example, the 2008 floods in Mozambique are known to have contributed to several health-related problems including poor access to health care. These points illustrate a need to further decentralize the access to ARVs to clinics or to purchase a vehicle to enable outreach services and a helicopter to reach areas that are inaccessible during raining seasons.
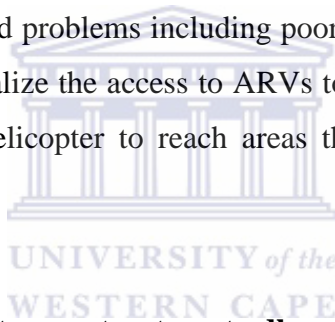
5.11 Impact of socioeconomic factors on treatment adherence

The financial difficulties experienced by the population group in this study are important as most people who attend the clinic are unemployed and are from far villages. Financial difficulties were commonly cited as a reason for not returning for clinic visits or for defaulting treatment. Currently patients in Namibia do not pay fees for health services at health centers but many do travel long distances to the clinic as ARVs are not available at their local clinics. Some of the participants in this study claim to have defaulted because of lack of transport money to the health facility. These finding are in line with those reported by Greene (2004) since in a study done in Bolivia it was found that patients who defaulted their treatment claimed not to have money for transport to health facilities. A study, conducted in South Africa on patients who missed follow-up appointments, highlights financial difficulties to be a leading cause of the problem since 34% of those who missed their appointment said it was because of financial problems (Maskew, MacPhail, Menezes & Rupel, 2007).

High unemployment rates are associated with low socio-economic conditions and are considered to have a negative impact on treatment adherence (Gelmanova *et al*., 2007; Low, 1995). In the current study the participants who are employed reported to be the sole family bread winners and the whole family, as well as extended family, depend on them. Some are employed in neighboring counties and claim to have problems to come for follow-ups contributing to non-adherence. According to Ware *et al*. (2009), travelling a long distance to attend clinical appointments places additional economic strain on patients and their families by competing with income generating activities which eventually leads to ARV interruptions. Lack of enough food was highlighted by the participants as contributing to their failure to take medications. Bezuidenhout (2004) considers inadequate financial or social support such as social grants, to have contributed to poor people's inability to acquire nutritious food in order to maintain a healthy status. In a study conducted in South Africa it was found that successful completion of treatment was attributed to the availability of food as patients did not take medications on an empty stomach which could exacerbate treatment side-effects. Moreover taking treatment on an empty stomach can make patients sick and cause them to default treatment (Zvavamwe & Ehlers, 2008). Therefore expanding the ARV programme to include provision of food will benefit lots of patients who cannot afford to buy nutritious food seeing as they depend on their millet fields for sustenance.

5.12. Lack of employers, support

Some participants claim to have missed their follow-ups because they had to choose between keeping their jobs or seeking health care. In a study conducted by Greene (2004) it was reported that some patients defaulted treatment in order to retain their jobs. Participants who are co-infected with TB claim they face the biggest challenge since they have to go for follow-ups for TB treatment and for ARVs. According to Munro *et al*. (2007a), various studies indicate that having TB has employment and work related consequences. Some of the participants in this study said that their bosses deduct money from their salaries for the days they are absent from work when they attend the hospital. Patients are considered to hide their disease because of work related issues which include fear of job loss or dismissal (Munro *et al*., 2007a). This therefore warrants the need to involve employers in the treatment of their employees. For example, to

either support employees to adhere to their treatment regime or to encourage them to go for their follow-up visits.

5.13 Medication related factors

In the current study it emerged that treatment side-effects impacted on treatment defaulting. Some patients reported to have stopped taking their treatment because of some drug related side-effects. These findings are in line with a study conducted in Botswana by Weiser *et al*. (2003) which indicated that side-effects pose a major barrier to treatment adherence. According to the latter study 12% of the participants claimed to have missed their treatment because of side-effects while 51% claimed to have experienced some treatment side-effects. A qualitative study done in three countries, namely; Botswana, Tanzania and Uganda, it was found that treatment side-effects, amongst others, contribute to non-adherence (WHO, 2006). A study conducted by Peltzer *et al.* (2010) indicated in a period of six months 4.6% of the participants had temporarily suspended treatment and 0.6% had changed ARVs because of side-effects. This current study found that patients who were taking a combined treatment regimen, ARVs together with TB treatment, found it difficult to complete their treatment. According to Maskew, MacPhail, Menezes and Rubel (2007) compliance is made difficult by multiple adverse side-effects associated with the drugs as well as interactions with other chronic medications. Similarly a study conducted by Munro *et al*. (2007a) demonstrated the burden that ARVs adds on TB treatment. Treatment side-effects as a barrier to treatment adherence have been reported in various studies (Ware *et al*., 2009; Maskew, MacPhail, Menezes & Rubel, 2007; Mills *et al*., 2006). Some ARV regimens are considered to be complicated due to a high pill burden. Trotta and co-workers (cited by Maskew, MacPhail, Menezes & Rubel, 2007) reported that patients on protease inhibitors (PI) were the poorest adherers and their main reason for non-adhering were vomiting and sexual dysfunction.

5.14 Treatment fatigue

According to Munro *et al*. (2007a) the attitude of patients on ARVs has been found to have a negative influence on treatment defaulting. In this current study patients said they had defaulted treatment because of feeling tired of having to take combined treatment for TB and ARVs. Some

patients claim to have defaulted treatment because they find it difficult to swallow the pills. Some participants say that the pills are big and one said she gets a sensation that the pills are going to get stuck in her throat. Some participants claim they force themselves to take the pills and sometimes they just decide not to take them. According to the WHO (2006) some studies reported ARV users often desire to take a drug holiday since ART is a lifelong treatment, and patients therefore become weary of taking medications every day. According to Osterberg and Blaschke (2005), 11% of the respondents in a questionnaire survey said they had decided to omit the doses.

Mills *et al*. (2006) state that some patients are non-adherent due to, for example, doubt; not being able to accept their HIV status; lack of self-worth; uncertainty of long term effects and some unwanted changes to body image. According to the MOHSS (2007a) it is important to do treatment readiness assessment before starting a patient on ART. A patient's willingness and ability to take long term treatment are vital aspects of the assessment. According to the theory of planned behavior the intention to perform certain behavior is influenced by the attitude towards the action thus intending to adhere to taking ARVs is influenced by a patient's negative attitude about the treatment or of being tired taking the medications (Armitage & Conner, 2001). HCPs should therefore use this theory when exploring factors that contribute to patients defaulting ART and this would require an assessment of a patient's readiness to start ARVs.

5.15 Conclusion

This chapter discussed the findings of the study with reference to what has been reported in the literature. The study findings are consistent with other studies identifying social, personal, health service, socio-economic, workplace, as well as treatment related factors, as contributing to non-adherence.

CHAPTER 6: RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

In this chapter the research findings are summarized and presented. Conclusions are drawn and recommendations are made. Further research topics are recommended to address the identified factors that contribute to ARVs defaulting in the Oshakati district.

6.2 Summary of findings

The purpose of the study was to explore factors that influence adherence to ART among patients at the Oshakati State Hospital in the Oshana region, which is a rural area in Namibia, and to propose appropriate interventions.

6.2.1 Religious, cultural, family and community related factors

In this study religious and cultural beliefs were found to influence defaulting. Lack of family support has led to an unavailability of treatment supporters who live near/with the patients and this in turn led to a lack of encouragement for patients to continue with their ARV treatment hence non-adherence. Furthermore, discrimination and stigmatizing behaviors and attitudes from family members, as well as from the community, towards HIV /AIDS patients were mentioned to be contributing to non-adherence.

6.2.2 Patient related factors

Poor knowledge/understanding and lack of information about HIV/AIDS and ARVs were found to have negatively impacted on ARVs adherence. However forgetfulness was found to be the leading factor that contributed to non-adherence. The study highlighted alcohol intake, illiteracy, and unplanned travels, to have all contributed to defaulting. Moreover the study also found treatment defaulting to have been influenced by lack of patient commitment to treatment.

6.2.3 Health service related factors

It is highlighted in the study that poor patient provider relationship, as well as attitudes of health providers, contributed to non-adherence. Poor organization at the clinic is mentioned to have contributed to long waiting times and eventually treatment defaulting. Moreover, shortage of staff led to long queues and overcrowding at the clinic and these were found to have influenced defaulting. Others reported to be satisfied with the heath service. Long travelling distances to the health facility and floods during the rainy season in the region were identified as barriers to adherence of ART.

6.2.4 Socioeconomic factors

Unemployment was found to be the major contributing factor to poor adherence since a lack of income results in lack of food as well as no funds to cover transport costs to attend the clinic.

6.2.5 Work place related factors

Poor employers' support was reported to contribute to defaulting behaviors as some of the participants' claim they were denied permission to go for their follow up treatment; some claimed they were followed to the clinic by their employers and were made to take leave without being attended to at the clinic. Some participants claim that money was deducted from their salaries after spending the whole day at the clinic.

6.2.6 Treatment related factors

The study highlighted treatment side-effect and treatment fatigue, as being some factors that led to defaulting.

6.3 Conclusion

The goal of adherence to antiretroviral treatment is to improve and prolong the lives of those who are on the treatment. This goal can only be achieved if patients on ARVs adhere to the treatment. It is therefore very important that counsellors provide adherence counselling properly in order to enhance adherence to antiretroviral treatment.

Based on the findings of this study several interrelated factors were found to contribute to non-adherent behaviour at the selected health facility in the Oshakati district. This study highlighted spiritual beliefs as a contributory factor as some patients stopped taking their treatment in solidarity to their faith or in favour of traditional medicine. Furthermore stigma and discrimination led to some participants not disclosing their HIV status which meant they accessed treatment at clinics far from their homes and in some instances participants feared that disclosure of their status could result in them being rejected by their respective partners which in turn influenced adherence negatively. Alcohol abuse and forgetfulness were amongst the factors reported to have contributed to non-adherent behaviour. Illiteracy as well as lack of knowledge about the treatment regimen were barriers that could be linked to personal and health service factors. This link thus shows it has negative implications for patients on the ARVs programme since it reflects on the quality of health provided to the clients which in turn contributes to treatment defaulting. Additionally, the link between socio-economic and health factors impacts negatively on patients' ability to access care. Furthermore, lack of integrating the ARV programme into the normal health services has created stigma from the society.

In view of findings of this study it is evident that there should be an holistic approach in the management of HIV/AIDS in order to address all these factors and to reduce the defaulting rate. This researcher is of the opinion that the policy makers, as well as other authorities, should utilize the findings of the study and come up with programmes that would ensure ARVs adherence.
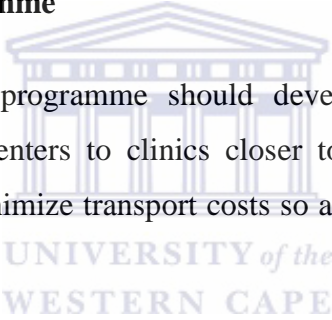
6.4 Recommendations

The following recommendations are made based on various issues that emerged from the study.

6.4.1 Training

➤ Training manuals on aspects contributing to adherence should be compiled.

➤ Continuous in-service training for health-care workers on customer care, professionalism and on the developments concerning HIV/AIDS adherence should be provided.

➤ In-depth training of community counsellors on the basic knowledge of HIV/AIDS, drug literacy and adherence counseling, should be provided.

➤ The nurse training curricula could also be reviewed to evaluate the inclusion and adequacy of content in customer care and ARVs.

➤ A follow-up system should be designed that will enable speedy identification of patients who are not adhering to their ARV treatment programme.

6.4.2 National HIV/AIDS programme

➤ The national HIV/AIDS programme should develop practical guidelines, such as decentralizing of ARVs centers to clinics closer to the communities to reduce long distances traveling and minimize transport costs so as to reduce the non-adherence rates in the regions.

➤ HIV/AIDS needs to be integrated into normal health care services to curb stigma and discrimination in the community as well as at the health facility.

➤ Treatment guidelines that are in use should be revised and improved on.

6.4.3 Health education

➤ Health education of HIV/AIDS patients as well as the community members should focus on how the disease is transmitted, how it is prevented, the side-effects of treatment and the importance of treatment adherence.

➤ Educational pamphlets on HIV/AIDS, treatment side-effects and the importance of compliance should be provided so that all citizens can readily access the information.

➤ On-going community education on the basic knowledge of ARVs, treatment side-effects, the importance and functions of treatment supporter, should be implemented.

➢ Involvement of patients in the decision making process regarding their treatment should be actively promoted and implemented.

➢ Resources should be allocated for the design and publishing of culturally acceptable educational pamphlets on ARV adherence, in the local languages, for dissemination in the community.

➢ Patients' values as well as religious beliefs should be considered when developing compliance strategies.

6.4.4 Literacy programs

➢ More literacy programs need to be developed and implemented in all villages; community members should be encouraged to join such programs in order to improve the literacy level in the area.

6.4.5 Health workers

➢ Patient-provider relationships should be improved by creating and maintaining a non-judgmental therapeutic environment as well as showing respect and empathy towards patients.

➢ A good relationship between patients and health-care workers is highly encouraged.

➢ Health workers should collaborate with the community based organizations in promoting adherence to ARV treatments.

➢ Community members should be motivated and requested to accept the responsibility of being treatment supporters of their HIV/AIDS infected relatives.

➢ The involvement of all multidisciplinary teams to assist the clients to adhere to ARV treatment should be encouraged.

➢ The number of the nurses and pharmacist assistants should be increased to attain quality of adherence services as well as to conduct outreach services.

6.4.6 Provision of social grant

➢ The government should provide grants where appropriate to assist the clients to meet dietary adherence requirements.

6.4.7 Out-reach services

➢ The Ministry of Health and Social Services should provide transport for ARV outreach programs; during the rainy seasons when there are floods a helicopter should be provided to reach inaccessible places.

➢ Conduct monthly outreach services.

6.4.8 Employers' involvement in the HIV/AIDS care

➢ The rights of the patients need to be protected at work; patients should have the right to access treatment without fear of money being ducted from their salaries or being fired. Therefore there is a need to develop workplace policy and programs.

6.4.9 Nutrition programme

➢ The government should provide food to unemployed people who are on ART.

6.5 Recommendations for further research

In line with the findings in this study the researcher recommends that further research be conducted into the following aspects:

➢ The impact of religious and cultural beliefs on ARVs defaulting should be determined.

➢ Nurses' knowledge of the psychological and emotional management of patients on ARV treatments should be researched.

➢ The effectiveness of employers' support in ARVs management should be scientifically established.

➢ The impact of combining the ARVs and TB service delivery department to identify the various degrees of stigma and discrimination that patients face should be researched.

6.6 Limitations of the study

The study was limited to the recruitment criteria of the participants. Selection bias might have occurred because participants were selected with the help of the nurse together with the community counselor. This was however minimized as the researcher had the final say over the selection and the eligibility criteria were strictly adhered to when selecting the study participants. The study focused on one health facility in the country which means that findings from the study may be too specific to apply to other settings. The fact that the researcher is Chief Registered Nurse (supervisor) at the same hospital may have introduced bias in the study. Errors may have occurred during translation of the recorded interviews from Oshiwambo English language.

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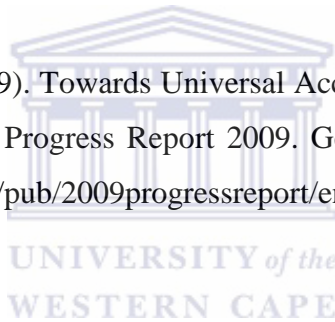
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APPENDIX 1

INTERVIEW GUIDE FOR ART PATIENTS

1.Can you please tell me what are your experiences living with HIV and being on life-long ART?

Prompts:

·When did you found out that you are HIV positive? And how did it affect you?

·What challenges did you face since knowing your HIV status?

·What made you decide to go to the programme?

·How do you feel about it now?

·How does it affect your life being on life-long ART?

2. Based on your experience what are the factors that can influence ones adherence to ARTS?

Prompt:

· Are you married?

· Does partner your know about your HIV status?

· Has your HIV status brought problems between your relationship and your partner or other family members?

· Is your family aware that you are on ART? Are they helpful?

· How is your family's behavior towards you? Did you observe any changes?

·Did you receive any counseling before starting ATR?

3. How do you experience coming for follow-up visits at the clinic?

Prompt:

·What would like to see changed or improved in the clinic services?

·How do you find the service at the clinic?

·How do you feel about coming for your follow-up visits?

·Do you have to anything to say about the health care providers?

·What discourages to or makes you feel like not coming for follow-up visits?

4. How do you experience the people in the community now that you are on treatment?
Prompt:

·Has their behaviors towards you changed?
·What are the things in the community that helps you to cope better with your problem and encourage you to live a positive life?
·What are the things in the community that discourages so much and makes it difficult for you to live a positive life?

5.What do you think are the factors related to taking treatment that can that can contribute to poor adherence?
Prompt:
·For how long now are you taking this treatment?
·How was the treatment at first?
·Was the explanation about taking the medication clear to you? Did you understand everything at first?
·How do you feel about taking tablets every day?
·What helps you taking your tablets as prescribed?
·What makes it difficult for you to take your tablets
· Have you tried to seek for medical help besides the health centers?

**6.If the patient works the following questions will be asked:**
·How does working affect you taking your medicine?
·How do you find taking your medicine daily during working hours? Do you face difficulties?
·What helps you to take your medicine as prescribed at work?
· What makes it difficult to take your medicine as prescribed at work?
·Are people at work aware that you are on ART? How are they treating you?
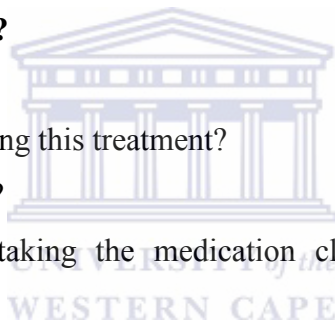
APPENDIX 2

Interview guide for health workers/ nurses working at CDC clinic (Key informants).

●How is your experience like with patients on ART?

●What do you think encourage patients on ARTs to come for follow-ups visits to the clinic?

●What do you think prevent them from coming for follow-up visits to the clinic?

●What do you think are the factors/things that influence patients on ARTs from defaulting treatment

UNIVERSITY OF THE WESTERN CAPE

School of Public Health

Private Bag X17 ● **BELLVILLE** ● 7535 ● South Africa

Tel: 021- 959 2809, Fax: 021- 959 2872

Participant Information Sheet

Dear participants

Thank you for your willingness to hear and participate in this research project. The research is being conducted for a mini-thesis which is part of the requirement for a Master's degree in Public Health (MPH) that I am completing at the University of the Western Cape.

Title of the research

Poor adherence amongst patients receiving antiretroviral therapy at Oshakati Intermediate Hospital, Namibia

Purpose of the study

The project aims to explore the possible factors that influence adherence to Anti-Retroviral Treatment (ART) at the Communicable Disease Clinic (CDC) at Oshakati. The study outcome will therefore be used in making recommendations to the ministry of health and inform the implementation of the HIV/AIDS programme in Oshakati district.

Who is the researcher? The study is being conducted by, Ms. Maria Bauleth, as a partial fulfillment of a Master's Degree in Public Health, at the University of the Western Cape, S Study aim

This study aims to describe ART patients' experiences of living with HIV/AIDS and explore factors that influence adherence to ART at Oshakati State Hospital, Communicable Disease Clinic (CDC) in the Oshana region, Namibia.

Description of the research

The study will include interviews with nurses who are working with patients who are on ART at the CDC clinic at the Intermediate Hospital Oshakati. Furthermore, an interview schedule will be conducted whereby you will be asked about your experience of being on ART and what are the challenges influencing HIV treatment completion. It will take you about 45 minutes – 1 hour to complete .If you agree to be interviewed, please sign in the consent form provided. By signing, it will be understood that you have consented to participate in the project, and that you consent to publication of the results of the project with the understanding that anonymity will be preserved.

Participation

Your participation is voluntary and there is no penalty if you do not participate. If you feel uncomfortable during the interview you may omit the questions that make you uncomfortable or you may withdraw from the study completely without providing any reason for your withdrawal. Should you wish to withdraw please simply not answer any further questions you can withdraw anonymously at any time during the interview. However, I will appreciate it very much if you participate. You will be given refreshments at the end of the interview as a token of my appreciation of your participation.

Benefits and cost from the study

You may not get direct benefits from this study. However, the results of this study will be used in making recommendations and inform the implementation of HIV/AIDS programs in the Oshakati district. There are no costs for participation in this study other than the time that will be spent in interviewing you.

What will be done to ensure confidentiality?

This is an entirely anonymous interview, and so your responses will not be identified with you personally in any way. To ensure security, the audio recorded tapes will be kept in a locked cupboard and key. They will be destroyed after data entry. Data will be stored electronically in a database on a secured server and access is restricted by password to the researcher.

Questions

Should you have further question or concerns regarding your participation in this study, please contact me as follows:

Maria F. Bauleth

 E-mail: bauleth@iway.na

Cell: +264811285934

Telephone at work +264 65 2233000

Or my supervisor

Brian Van Wyk

University of the Western Cape

Private Bag X17, Belville 7535

Telephone: (021)959-2173

Cell: 0829110904

 E-mail:**schaay@uwc.ac.za** or bvanwyk@uwc.ac.za

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CONSENT FORM

Title of Research Project: Poor adherence amongst patients receiving antiretroviral therapy at Oshakati Intermediate Hospital, Namibia

If you choose to participate in the study, your signed consent is required before you proceed for the interview. By signing you have agreed to the following: the study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's name………………………..

Participant's signature……………………………….

Researcher's signature ………………………

Date………………………

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Coordinator's Name: Brian van Wyk

Private Bag X17, Belville 7535 Telephone: (021)959-2173 Cell: 0829110904

APPENDIX 5&6

REPUBLIC OF NAMIBIA
MINISTRY OF HEALTH & SOCIAL SERVICES
OSHANA REGION DIRECTORATE OF HEALTH

Private Bag X5501
Oshakati

Phones: +264(65)2233000
+264(65) 221 380
Fax: +264(65) 224564
+264(65) 221 390
E-mail: supt.ihosh@iway.na

INTERMEDIATE HOSPITAL OSHAKATI

Enquiries:	Ref:	Date: 29 March, 2010

MINISTRY OF HEALTH
& SOCIAL SERVICES
P/Bag 5501
2010 -03- 2 9
Oshakati
Namibia
OSHAKATI HOSPITAL

Ms. M. F. Bauleth

PO Box 2280

OSHAKATI

REQUEST TO CONDUCT RESEARCH STUDY

Your letter on the above issue refers.

The Intermediate Hospital Oshakati Management granted you a permission to do your study, on condition that you must adhere to the rules and regulations of the institution.

During your study period, you must under the supervision of the Medical Officer and Registered Nurse in charge of Communicable Disease Clinic.

Yours Sincerely

MEDICAL SUPERINTENDENT
OSHAKATI HOSPITAL
MINISTRY OF HEALTH
AND SOCIAL SERVICES
DR SHANNON KAKUNGU NAMIBIA

MEDICAL SUPERINTENDENT

Medical Superintendent: Dr. Shannon Kakungula   Chief Control Registered Nurse: Ms. Ashugi Hilma   Chief Control Officer: Mr. Ifagula Ben

103

REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198	Ministerial Building	Tel: (061) 2032562
Windhoek	Harvey Street	Fax: (061) 272286
Namibia	Windhoek	E-mail: hilmanangombe@yahoo.com
Enquiries: Ms. H. Nangombe Ref.: 17/3/3/AP		Date: 04th March 2010

OFFICE OF THE PERMANENT SECRETARY

Ms. B. F. Bauleth
P. O. Box 2280
Oshakati
Namibia

Dear Ms. Bauleth,

Exploration of factors associated with poor adherence amongst patients receiving antiretroviral therapy at Intermediate Hospital Oshakati Communicable Disease Clinic in the Oshana Region.

1.   Reference is made to your application to conduct the above-mentioned study

2.   The proposal has been evaluated and found to have merit.

3.   Kindly be informed that approval has been granted under the following conditions:

3.1   The data collected is only to be used for academic purpose;
3.2   A quarterly progress report is to be submitted to the Ministry's Research Unit;
3.3   Preliminary findings are to be submitted to the Ministry before the final report;
3.4   Final report to be submitted upon completion of the study;
3.5   Separate permission to be sought from the Ministry for the publication of the findings

Yours sincerely,

MR. K. KAHUURE
PERMANENT SECRETARY

"Health for All"

104