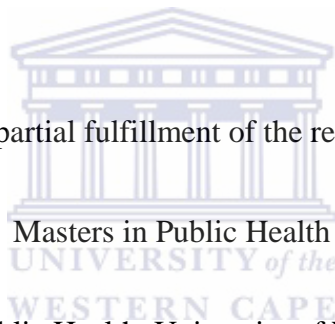


# **PATIENT PERCEPTION ABOUT REASONS FOR NON-ADHERENCE TO ANTIHYPERTENSIVE MEDICATION IN WINDHOEK DISTRICT**

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A mini-thesis submitted in partial fulfillment of the requirements for the degree of



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## **KEYWORDS**

Hypertension

Antihypertensive medication

Adherence

Non-adherence

Treatment

Barriers

High blood pressure

Lifestyle modification

Blood pressure control

Katutura Township



## **ABSTRACT**

**Background:** Adherence is the extent to which a person takes medication as prescribed by health-care providers. It includes both dosing regularity and timing of intake. Antihypertensive medication reduces high blood pressure effectively and reduces the risk of heart failure, renal failure and stroke.

Hypertension is considered a public health problem due to its impact of high mortality and morbidity. According to the Namibia Ministry of Health and Social Services a total of 34,826 people, aged 18 years and older in the Windhoek District, were diagnosed with hypertension in 2006-2007; the premature death toll due to uncontrolled hypertension increased from 88 deaths per 1,000 cases in 2006 (MOHSS, 2006) to 301 deaths per 1,000 cases in 2007 (MOHSS, 2007).

Despite the availability, accessibility and affordability of medication at clinics and health centers, non-adherence is increasing, especially among the young productive population.

The purpose of this study was to gain an understanding into the perceptions of non-adherent hypertension patients in Katutura Township in the Windhoek District about their treatment regimens. The research provided information that can be used by policy-makers in the development of a hypertension policy to improve interventions

**Aim:** The study aimed to explore the perceptions of non-adherent hypertensive patients in Katutura Township by looking at what they considered to be the factors influencing their non-adherence to antihypertensive medication.

**Methodology:** An explorative qualitative study was conducted, using individual in-depth interviews among eight non-adherent hypertension patients, aged 35 years and older. The eligible

respondents were purposively selected. A thematic content analysis of transcribed data was conducted where themes were related to patients' perceptions for non-adherence.

**Results:** The results showed that the respondents were not adhering to medication. There were several reasons given for this. An important factor was their limited knowledge about the hypertension disease and medication, in part due to ineffective health education. Other factors included the side effects of the medication as well as the belief that antihypertensive medications are poisonous and addictive. Cultural and religious beliefs were also found to be contributing factors to non-adherence. The findings also revealed that the doctors appeared not to have time to examine patients. The attitudes of the nurses were identified as factors that influence non-adherence. It is reported that they do not listen to patients' complaints and patients do not feel respected by them. Additional factors included the cost of traveling to the health center which was considered to be prohibitive, long distances to get to the health center as well as 3-5 hours waiting time at the health center influenced non-adherence. Some respondents claimed that they do not want to mix medication with alcohol so that when they are drinking alcohol, they skip their medications. Lastly, some of the patients earn low income and as they are paid per hour, they cannot afford to take time off from work and this further results in non-adherence to medication.

**Conclusion:** The findings concurred with findings of other research done in developing and developed countries. These included poor interpersonal relationships between health-care providers and patients, a lack of knowledge about hypertension and its treatment; cultural beliefs and traditions, and standards of health care provision. Improvement in communication between

health-workers and hypertensive patients may promote better adherence. The study indicates an urgent need to design intervention measures to enhance adherence among hypertension patients.



## DECLARATION

I, Milka Ipula Mushimba, hereby declare that this study *Patient perception about reasons for non-adherence to antihypertensive medication in Windhoek district* is a true reflection of my own research, and that this work it has been submitted for any degree or examine in any other university, and that all the source I have used or quoted have been indicated and acknowledged by complete references.

Full Name: Milka Ipula Mushimba

Date: 01 November 2011

Signed.....

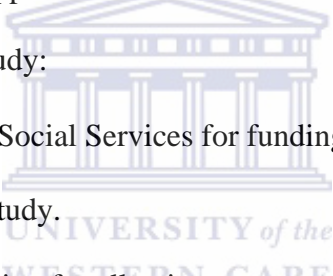


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- 
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## **DEDICATION**

This study is dedicated to my mother Helena Nderura, my late farther Kephass Phuller Nderura an example of astuteness for raising me into the person that I am today. You instilled in me a sense of responsibility, hard work, determination, self-confidence and focus. Your love, dedication to your family and friends is an inspiration and will remain with me forever.



## ABBREVIATIONS

**AIDS** Acquired immunodeficiency syndrome

**ART** Antiretroviral therapy

**ARV** Antiretroviral

**DOTS** Direct observed therapy short course

**DART** Direct Observed Anti Retroviral Therapy

**KHC** Katutura Health Center

**HAART** Highly active antiretroviral therapy

**HBM** Health belief model

**HCPs** Health-care providers

**HIS** Health information system

**MOHSS** Ministry of Health and Social Services

**PHC** Primary health care

**RMT** Regional management team

**TB** Tuberculosis

<b>TPB</b>	Theory of planned behavior
<b>USA</b>	United States of America
<b>UWC</b>	University of the Western Cape
<b>WHO</b>	World Health Organization



## DEFINITION OF KEY TERMS AND CONCEPTS

### **Adherence**

Fogarty et al. (2002) reviewed 20 articles and 74 conference abstracts to explore the nature of adherence research. One study defined adherence as the ratio of days of drug supply to days between drug suspending and subsequent refill of greater than 90%. Another study described adherence as when a patient filled a prescription less than seven days from an expected refill day.

### **Compliance**

Compliance is defined as the extent to which a person's medication taking behavior coincides with the health care providers' medical advice (Kaveh & Kimmel 2001). The world compliance originated from practitioner- d paradigm and implies an authoritarian model that place the patient in a passive role (Felkey, 1995).

### **Non- adherence**

The WHO (2003a) defined non-adherence to medication as failure to take medication as prescribed by discontinuing medication before the course.

It is taking more or less medications than prescribed and also by taking dosage at the wrong time.

### **High blood pressure**

“High blood pressure is a measure of how hard the blood pushes against the walls of your arteries as it moves through your body. It is normal for blood pressure to go up and down through the day, but if it stays up, you have high blood pressure. Blood pressure consists of two numbers systolic and diastolic. Systolic shows how hard the blood pushes when the heart is pumping. The diastolic number shows how hard the blood pushes between

heartbeats, when the heart is relaxed and filling with blood. High blood pressure is blood pressure greater than 140/90” ( Healthwise, undated:1).

### **Regimen**

A regimen is a strictly regulated treatment program like a diet or exercise schedule (Mosby, 1986). For the purpose of this study, a regimen is defined as a set of drugs administered to a client to achieve a required goal.

### **Counseling**

Counseling is aimed at assisting people to understand and develop their personality in lieu of existing problems (Baruth & Huber, 1985).

### **Guidelines**

The Oxford Dictionary (1984) defines a guideline as a directing principle. In other words a guideline is a written principle to help us to manage and /or solve a problem.

### **Health promotion**

”Health promotion is a unifying concept for those who recognize the need for change in the way and condition of living in order to promote health. Health promotion represents a mediating strategy between people and their environment, synthesizing personal choice and social responsibility in health to create a healthier future.” (WHO, 1984).

### **Adherence with lifestyle modifications**

Adherence with lifestyle modification aimed at lowering blood pressure includes eating salt and fat free diet, regular exercises (at least 30 minutes three times per week) consumption of alcohol less than 20g of ethanol for men and less than 10g ethanol for women and cessation of smoking (Ogden, Motsamai, Xin, He, Frontini & Whelton, 2001).

### **Modification**

Modification is defined as a small alteration, adjustment or limitation (online dictionary 2006). For the purpose of this study modification refers to change in lifestyle, namely habits, attitudes and behavior necessary for controlling hypertension.

### **Lifestyle**

Lifestyle is defined as a “set of attitudes, habits and possessions regarded as typical of a particular group or an individual” (Collins Concise Dictionary and Thesaurus, 1995).

### **Perception**

Perception is defined as “a way of understanding or regarding something” (Oxford Dictionary, 2001).



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**Table 4.2:** Main themes and subthemes of the study



## CHAPTER 1: INTRODUCTION

### *1. Overview of hypertension condition*

Developing countries are facing the challenge of undergoing an epidemiological transition with the double burden of non-communicable and communicable diseases. Although treatment is available to control blood pressure, non-adherence to antihypertensive medication is one of the most important factors accounting for uncontrolled high blood pressure (Kabir, Iliyasu, Abubakar & Jibril, 2004). Uncontrolled high blood pressure (UHBP) increases the risk of heart failure, stroke and kidney diseases. Adherence to antihypertensive medication has been demonstrated as effective in lowering of blood pressure (BP) and preventing other complications, such as retinopathy, memory and cognitive impairment, and general poor quality of life. Patients who modify their lifestyles when on antihypertensive medication should then enjoy improved health (Siegel, Lopez, & Meier, 2007; Vemeire, Hearnshaw, Van Royen, & Denekens, as cited in Kagee et al. 2007). Heneghan, Rafael, Mants & Glasziou, (2007) report that hypertension affects 26.4% of adults worldwide and is ranked as the third cause of disability adjusted life years. They projected that by 2025, 29.2% of the world population will be hypertensive. The overall prevalence of hypertension in Africa is about 29.4% (Edward, Unwin, Mugusi, et al., 2000). In sub-Saharan Africa, and elsewhere, hypertension is considered a public health problem due to its impact of high mortality and morbidity. As noted by Odili, Oghagbon, and Ugwa et al. (2008) non-adherence to antihypertensive medication negatively impacted on the development of the countries because of loss of young productive people and the high financial cost to the health care system.

The WHO (2003) guidelines on improving adherence rates emphasizes the need for countries to promote, protect, and support hypertensive patients in their efforts to comply with antihypertensive medication, thus reducing morbidity and mortality among the patients and, ultimately in the country as a whole.

Adherence to medication is described by Osterberg and Blaschke (2005) as the extent to which a patient takes his/her medication as prescribed by a health care provider (HCP). Kabir et al. (2004) provide an alternative description for non-adherence, which they describe as irregular attendance at follow-up clinics; inability to obtain drugs regularly; not taking drugs on a daily basis as prescribed; or taking drugs less than six days in a week. For the purpose of this study, a hypertensive patient who failed to go for follow-up clinics for two consecutive months and did not take medication as prescribed is considered non-adherent.

Non-adherence to antihypertensive medication is a challenge throughout Namibia, although the factors that contribute to non-adherence may vary from region to region. Windhoek District is recognized as having a challenge with hypertensive patients who do not adhere to their medication. According to the Ministry of Health and Social Services a total of 34,826 people aged 18 years and older in the Windhoek District were diagnosed with hypertension in 2006-2007; the premature death toll due to uncontrolled hypertension increased from 88 deaths per 1,000 cases in 2006 (MOHSS, 2006) to 301 deaths per 1,000 cases in 2007 (MOHSS, 2007). This increase is despite the availability, accessibility, and affordability of medication at clinics and health centers, and it applies especially to the young productive population.

## ***1.1 Strategies for hypertension treatment***

According to Riaz, (2002) the medical care of patients with hypertension consists of two categories: treatment of the elevated BP, and treatment and prevention for hypertensive heart disease. Furthermore, the strategies include pharmacotherapy directed towards hypertension, dietary modifications, regular exercises, and weight loss. These are discussed below.

### **1.1.1 Pharmacotherapy**

Thiazide diuretic, calcium channel blockers, beta-blockers and combined alpha- and beta-blockers, Angiotensin Converting Enzyme (ACE ) inhibitors, angiotensin receptor blockers and direct vasodilators such as hydralazine, are recommended for hypertension (Riaz, 20002). The first line treatment is thiazide diuretics and beta-blockers for hypertensive patients without complications while calcium channel blocker is more effective for elderly patients with systolic hypertension. For patients presenting with adverse effects of ACE inhibitors and the angiotensin, receptor blockers are the reasonable alternatives. The Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure emphasized that peripheral alpha-channel blockers should not be issued to hypertensive patients based on recent findings on side-effects related to cardiovascular mortality and morbidity (Riaz, 20002).

### **1.1.2 Dietary modifications**

Pharmacology, without the combination of diet and healthy life style, might not lower BP. However, low sodium diet for hypertensive patients, was found in various studies to reduce BP thus a sodium restriction of 50-100 mmol/d, which is equivalent to 3-6g of salt/d, is recommended (Riaz, 2002). A high potassium diet in various epidemiological studies has shown an association with lowering of BP. Therefore, vegetables and fruits containing potassium should

be recommended. A low cholesterol diet should also be advised for hypertensive patients. Patients should be motivated and advised to not drink more than 1-2 measures of alcohol per day as it has been associated with high blood pressure (Riaz, 2002).

### **1.1.3 Weight reduction**

According to Riaz, (2002) epidemiological studies revealed about 50% of obese patients have hypertension and studies have found that weight reduction is one of the most effective ways to reduce high blood pressure.

### **1.1.4 Regular exercises**

Regular physical activities such as walking, running and cycling have been demonstrated to improve cardiovascular well-being and lower BP (Riaz, 2002).

## ***1.2 Management of hypertensive patients at Katutura Health Center***

Management of hypertension in Namibia is provided in all health facilities. Hypertension clinics have been decentralized to all health centers as well as clinics, rather than only in hospitals. Patients are given follow-up dates at the health center. According to MOHSS (2003) the Guidelines for Management of Hypertension stipulate that all hypertension patients should be reviewed monthly with the focus on the control of BP and side-effects of medications. However, if the doctors are satisfied with the condition of the patients, medication prescriptions for three months are issued. During a routine follow-up visit the nurse should focus on measurement of BP and weight, motivate patients on non-pharmacological measures, test urine for proteinuria, and carry out blood tests for urea and electrolytes, and creatinine.

### *1.3 Description of study setting*

The study was conducted at the Katutura Health Center (KHC) in the Katutura Township of Windhoek District, Khomas region in Namibia. Windhoek District is in the center of Khomas region, which is the largest region in Namibia with an area of 284,809 square kilometers (National Planning Commission & Central Bureau of Statistics, 2003). The KHC is the largest clinic situated in the Katutura Township, which is the largest and the oldest Black location in the Windhoek District. The population of this township is predominately black consisting of people from different tribal groups who, in some instances, have migrated from rural areas, seeking a better standard of living. There is great cultural and ethnic diversity in Katutura, with more than eight languages spoken. These include Otjiherero, Oshiwambo, Lozi, Damara, Nama, Tswana, Afrikaans, and English

The KHC provides outpatient primary health care (OPPHC) services to a population of about 88,817 residents (Khomas Region Report 2007/8 and 2008). Patients travel between five and 25 kilometers (kms) to access services, and the majority of them depend on public transportation. The patients collect their medication from the health center. The service is free for the elderly but patients below the age of 60 pay N\$ 3.00 (R3.00 equivalent) per visit and medications issued are usually free.

The 2001 National Population and Housing Census estimated the district population to be about 243, 272. The population is growing at a rate of 4.4% per annum, principally through migration from rural and other urban areas (National Planning Commission & Central Bureau of Statistics, 2003). HIV/AIDS, tuberculosis (TB), maternal deaths, drug and alcohol abuse (chemical dependency), and the increasing non-communicable diseases, with hypertension in the lead, are

the main health problems in the district (MOHSS, 2005/6). The main occupations of the inhabitants include civil servants, people employed in the government sector, self employed people in low-income small income enterprises and unemployed people. According to the 2006/7 Namibia Demographic and Health Survey, 44% of women and 62% of men are employed; the majority of the unemployed being the young population. In addition, only 7% of women and 9% of men have formal education.

#### ***1.4 Stakeholders consultation***

A consultative meeting was conducted with the non-communicable disease coordinator at a national level in the Ministry of Health and Social Services to gain more understanding about the burden of hypertension disease in Namibia. In 2009, consultative interviews in Windhoek were also conducted with (i) the Regional Director of Khomas Region (in which Katutura Township is situated), (ii) a registered nurse of Katutura Intermediate Hospital, and (iii) a principal registered nurse of KHC, to gain insight into the problem. The above mentioned staff highlighted non-adherence to prescribed medication as a problem. These interviewees suspected that several factors exist that might influence non-adherence, but the actual reasons, as perceived by patients, remains unknown.

#### ***1.5 Problem statement***

The Ministry of Health and Social Services Report (Khomas Region Annual report 2007/2008) revealed a high prevalence of hypertension among patients admitted to the Katutura Intermediate Hospital and Windhoek Central Hospital respectively, despite the availability of free medication. The Windhoek District has the highest rate of admissions compared to other districts, with the majority of patients coming from the Katutura Township.



Non-adherence to antihypertensive medication, which was considered to be a reason for the high rates of hypertension, is a concern because failure to adhere to treatment causes medical complications of the disease, reduces patients' quality of life, wastes health care resources, and erodes public confidence in the Ministry. As noted above, the staffs at KHC were unaware of the reasons for non-adherence to medication. Therefore, in order to address the problem of non-adherence to antihypertensive medication, it was deemed essential that a study be conducted to explore factors that influence non-adherence behavior amongst hypertension patients, and the perceptions of the patients within the local context.

### ***1.6 Rationale of the study***

The purpose of the study was to gain an understanding of the perception of non-adherent hypertension patients in Katutura Township about the factors that influence their non-adherence. The researcher anticipated that the findings from this study would influence policy-makers in the development of a hypertension policy, which in turn should improve the interventions and reduce morbidity and mortality in the district.

### ***1.7 Outline of the study***

This chapter introduces the problem statement and rationale of the study. Chapter 2 discusses the literature reviewed on factors that influence non-adherence to antihypertensive medication and the theories that can be used to explain non-adherence to medication. Chapter 3 describes the aim, objectives, the methodology used, and the study limitations. Chapter 4 presents the results. Chapter 5 discusses the findings of the study. Chapter 6 discusses the conclusions and recommendations of the study.

## CHAPTER 2: LITERATURE REVIEW

### *2. Introduction*

A literature review on the factors that influence non-adherence to antihypertensive medication was done to gain an in-depth understanding on patients' perception on the reasons why they failed to adhere to medication. The researcher took this approach in order to use these findings to increase awareness among health care providers and policy-makers to develop strategies to minimize non-adherence to antihypertensive medication. The literature review covered unpublished and published reports that are related to patients' perception on factors that contribute to non-adherence to antihypertensive medication. The reviewed documents on non-adherence to antihypertensive medication were obtained from websites as cited in the list of references, MOHSS of Namibia, and articles from journals and books.

This chapter covers the main concepts of treatment for hypertensive patients and factors that influence adherence to medication. Firstly the key concepts of the study, adherence and compliance, are defined. This is followed by a discussion on the factors that influence non-adherence and an overview of issues related to adherence to treatment of HIV/AIDS (ART) and TB. Lessons learned from HIV/AIDS and TB, diseases requiring long term treatment, are drawn on to explain issues related to adherence to antihypertensive medication. A description of emerging principles related to adherence is provided. The chapter concludes with adherence theories.

## ***2.1 Adherence to hypertension medication***

There is no universal definition of medication adherence hence various researchers define medication adherence in hypertension differently. The terms compliance and adherence are sometimes used interchangeably; compliance has been used to describe a patient's ability to take medication as prescribed but the term has numerous connotations. Compliance is seen as connoting a paternalistic relationship between a physician and patient, and noncompliant patients have been described as performing deviant behavior or exhibiting weakness of character (Osternberg & Blaschke, 2005). Adherence is better seen as representing the more complex web among patients, provider, and medication and it reflects the fact that following a medication regimen is not necessarily a simple choice (Osternberg & Blaschke, 2005).

Mehta, Moore and Graham (1997) explained that adherence relates to the extent that an HIV/AIDS patient follows a prescribed regimen. They cite Young et al.(1986) who reported adherence in terms of a default rate from follow-up, or significant deviation from a prescribed regimen. The specifics of what the adherence or defaulter rate measure may depend on the prescribed regimen. For example, adherence may apply to medication taking behavior, dietary intake, or physician therapy.

Jani, Stewart, and Tavel (undated) explain that with adherence emphasis is more on the interaction between providers and patients. Adherence has more to do with a joint decision that is taken by the provider and the patient. This means that the patient is part of the decision-making and takes ownership of the prescribed treatment plan. Therefore, adherence can be looked at as a collaborative process designed to optimize clinical outcome.

### **2.1.2 Non- adherence to antihypertensive medication**

The WHO (2003a) defined non-adherence to medication as failure to take medication as prescribed by discontinuing medication before expected completion of the course, taking more or less medication than prescribed and by taking dosage at the wrong time. As noted above, Kabir et al. (2004) described non-adherence in relation to the irregularity of taking medication, i.e., an irregular attendance at follow-up clinics; inability to obtain drugs regularly; not taking drugs on a daily basis as prescribed; or taking drugs less than six days in a week. The WHO (2003b) reported that in the United States of America (USA), China, and Gambia, only 27%, 43% and 51% of patients respectively, adhere to antihypertensive medication. The same patterns have been reported for other health conditions, such as asthma, depression, and HIV/AIDS.

### **2.2 Treatment for hypertension**

In most countries, including Namibia, antihypertensive medications are provided to patients diagnosed with BP readings of 140 mm Hg systolic and above 90 mmHg diastolic (140/90). In addition, patients with complications, such as heart failure, are provided with a combination of prescription medications. Indeed, there is growing evidence suggesting that a number of drugs, combined with modifications of lifestyle, have the potential to improve health outcomes (Siegel, Lopez, & Meier, 2007; Weber, 2003). Poor lifestyles, such as unhealthy diet comprising, for example, salty and fatty food, and lack of exercise, often result in being overweight which contributes to hypertension. Therefore a change in lifestyle is also recommended for hypertensive patients (Padwal, Straus & McAlister, 2001; Weber, 2003).

Despite the availability of effective medication, studies reveal that in some countries patients fail to control high BP while others demonstrate effective use of medication. The WHO (2003a)

reported that in Venezuela 4.5% of treated patients had good BP control. In the United Kingdom (UK), the percentage with good control was 7% and in the USA it was 30%.

### ***2.3 Factors that influence adherence to medication***

According to the WHO (2003a) and the International Pharmaceutical Federation (2003), adherence to long-term treatment therapies in developed countries in the general population is around 50%, while in developing countries it is much lower due to inequality of access to health care facilities and suboptimal supervision by health care professionals (HCPs). From the literature reviewed health service factors, patient-related issues, cultural and religious beliefs, and socio-economic factors, influence adherence behavior to antihypertensive medication.

#### **2.3.1 Health services-related factors**

The health services-related factors that are believed to cause non-adherence to prescribed medication include: affordability and non-availability of antihypertensive medication; quality of care; the difficulty to reach the health facilities due to long distances; a lack of accessibility of services by community members (Kabir et al., 2004). These factors are presented below.

##### ***2.3.1.1 Affordability and non-availability of antihypertensive medication***

According to the study conducted by David (2006), the high cost of prescriptions in the UK influences non-adherence. The same study revealed that in other countries, such as Canada and the USA, medication costs are also likely to reduce adherence. However, David's (2006) study found that in the Seychelles Islands, where patients receive free medication they still did not adhere to medication. Bovet, Burnier, Madeleine et al. (2002), in response to non-adherence in

the Seychelles Islands, suggested that people do not adhere to medication because they perceive hypertension as an unimportant health problem.

### ***2.3.1.2 Quality of care***

Kagee and Le Roux, (2007) reported that when patients go for follow-up appointments they receive medication without being examined and this discourages them from taking their medication. Furthermore, it has been noted that non-compliance of the physicians to the recommended WHO guidelines on antihypertensive medication also influences non-adherence (WHO, 2008). For example, some physicians prefer to prescribe the latest medication on the market with the belief that it is more effective and better than the medication recommended by the WHO. However, this medication is often more expensive thus some patients cannot afford it, which in turn results in non-adherence (Myers, 1999; WHO, 2008). In addition, the authors argue that some physicians do not have sufficient time to physically and psychologically evaluate patients and give counseling and education to them about their illnesses and the need for taking their medication on a regular basis. These attitudes and behaviors of health workers towards the patients were found to be a contributing factor to non-adherence (Myers, 1999; WHO, 2008).

### ***2.3.1.3 Waiting time and long distance to health facility***

Studies conducted in countries such as Botswana and Tanzania revealed long waiting times at health facilities as a contributing factor to non-adherence (WHO, 2006); patients spend an average of five hours waiting for service at the health facility and this is a key factor to adherence. A lengthy waiting time has a negative impact on the attendance at clinics and on adherence (WHO, 2006).

## **2.3.2 Patient-related factors**

Patient-related factors are individual factors that relate to everyday lives that negatively influence a patient's ability to adhere to medication. These factors may include treatment regimens, beliefs, patient forgetfulness, side-effects, and physiological changes.

### ***2.3.2.1 Antihypertensive medication regimen***

Adherence to medication is strongly affected by the number of times a particular medication must be taken per day (Halpern, Khan, Schmier et al., 2006; Kabir et al., 2004; Myers, 1999). This is supported by a cross-sectional descriptive comparative study carried out in a 400 bed multi-specialist tertiary care hospital in India on non-adherent patients. The study shows that taking a once per day dose is associated with greater adherence compared with a twice or more per day dose regimen (Palanisamy & Sumathy, 2009). A cross-sectional study on compliance of medication among hypertensive patients in Murtala Mohammed Specialist Hospital, Kano, Nigeria showed that adherence to medication was related to the time of dosing and frequency and not to the number of medications. This study also stated that patients who take medication once per day adhere better than those who take medication twice or more daily (Kabir et al., 2004). The authors explained that patients are less active in the morning as opposed to midday and are therefore more likely to take their morning dose than the midday one.

### ***2.3.2.2 Side-effects of medications***

Myers (1999) and the International Pharmaceutical Federation (2003) both reported that the side-effects of medications are major barriers. The Ministry of Health and Social Services in Namibia (2003) explained that some patients experienced side-effects, such as tachycardia, palpitations, flushing, hypotension, and angina symptoms, and that these were shown to have an impact on

adherence. Some patients indicated that they could not tolerate the medication due to frequent urination with the result they often opted to discontinue the medication to avoid these side-effects (Kagee, Le Roux, & Dick, 2007).

In a descriptive qualitative study done in Vanga Hospital, Bandundu Province and in the Democratic Republic of Congo it was found that the side-effects influenced non-adherence because the medication causes discomfort or makes patients sick (Fina Lubaki, Malete & Ndimande, 2009).

### ***2.3.2.3 Patient forgetfulness***

Respective studies conducted by Osterberg and Blaschke (2005) and Kabir et al. (2004) reported that patients often forget to take their medication. Wroth and Pathman (2006) maintain that social events, travelling for work, and home tasks are factors that influence patients' forgetfulness. Some patients have different priorities, while others omit medication if they feel well. According to an Ambulatory Care Quality Improvement Project, a cohort study conducted among 36,821 diabetic and hypertensive patients from the general internal medicine clinic of seven Veterans Affairs Medical Centers in the USA, non-adherence to antihypertensive medication and hyperlipidemia is associated with alcohol abuse. When patients are under the influence of alcohol they tend to forget to either take their medication or go for follow-up appointment or consciously forget to take their medication because they are worried about how it may interact with concurrent intake of alcohol (Bryson, Au, Sun, Williams, Kivlahan & Bradley, 2008).



#### **2.3.2.4 Illiteracy**

Kagee, Le Roux & Dick's (2007) study showed that patients who have low levels of education or are illiterate, have a poor understanding of hypertension as well as its treatment and this results in them failing to carry out the instructions. A cross-sectional study conducted in Kano, Nigeria by Kabir et al. (2004) showed similar results: patients' lack of knowledge and understanding results in them not being able to understand written instructions, leading to non-adherence to medication.

#### **2.3.2.5 Patients' beliefs and perceptions of the effectiveness of medication**

An exploratory study conducted in South Africa by Kagee, Le Roux & Dick's (2007) revealed that the absence of symptoms, or a belief that medication might be addictive or create a dependency, have an impact on adherence. A cross-sectional study by Kabir et al. (2004) showed similar results: patients' lack of knowledge and understanding, or a normal BP reading during the last visit to the clinic, contributed to non-adherence to medication. Steyn and Levitt (1995-2005) supported the review about non-adherence of patients with little knowledge of hypertension, adding that the belief that traditional medicines and home-brewed beer were more effective than antihypertensive medication was a contributing factor. A study by Gascon et al. (2004) revealed that patients' lack of knowledge of hypertension was important since patients claimed that the little knowledge they have about the condition was acquired from magazines and radio health talks.

#### **2.3.2.6 Mental status**

A study conducted in the USA among older people indicated that non-adherence to antihypertensive medication was hampered by many physiological changes, such as aging,

disturbance in memory and memory loss, sensory loss as well as depressive life factors associated with retirement (Brown et al., 2005 as cited by University of Missouri-Columbia, 2008).

Over a million of older adults have a visual impairment which is a critical factor in adherence to medication regimen. Loss of vision can impair reading and understanding of prescriptions and the instructions given by the doctor. Moreover, patients with hearing impairments may misunderstand communication with the physician or pharmacist and this will influence adherence (Herzog, Dufresne & Greene, 1990).

Herzog et al. (1990) stated that memory loss is a critical problem for many elderly people when they try to recall the instructions for medication use. This is supported by the study of Vermeire, Hearnshaw, Van Royen, & Denekens (2001) who found that patients' inability to recall the doctors' instructions often resulted in them not adhering to their drug regime, causing them to forget the doctor's instructions. Depression in elderly patients can also impact negatively on adherence to medication.

### **2.3.3 Socio-economic related factors**

Low income, poor housing, unemployment, and alcohol abuse, are also described as barriers to adherence to antihypertensive medication (Nakiyama, Kwaza, & Akurut, 2002).

#### ***2.3.3.1 Financial constraints***

A study conducted in South Africa by Kagee, Le Roux & Dick (2007) revealed that high transportation costs to the clinic were an important factor limiting poor people's ability to adhere to medication. In addition, the study revealed that patients experienced problems getting time off

work as their employment conditions did not include medical benefits. The same study reported that some patients are paid on an hourly basis and consequently the long waiting times at the clinic discouraged them to come for follow-up appointments.

### ***2.3.3.2 Level of education***

A study conducted in Kano, Nigeria, by Kabir et al. (2004) revealed that poor adherence was found among patients without formal education who earned less than US\$6-666 per month, compared with those with formal education and a monthly income more than US\$6-666 per month. A study conducted in Botswana, Tanzania, and Uganda, revealed that patients with low education levels may not be able to understand and comprehend the advantages and disadvantages of taking medication (WHO, 2007).

### ***2.3.3.3 Social support***

A study done in the Democratic Republic of Congo found that some hypertensive patients did not receive support from their families. The latter regarded them as bad people who were thus responsible for their hypertension condition or they are regarded as being witches. Due to the lack of support from their families and the surrounding community members, patients are demotivated to adhere to medication (Fina Lubaki, 2009). In addition, the WHO (2006) reported that a lack of parents or a partner may negatively affect a patient to take the medication or to attend follow-up appointment.

### ***2.3.3.4 Alcohol abuse and living alone***

In addition to the forgetfulness resulting from excessive alcohol use described above, a population-based survey on compliance to antihypertensive medication in the Seychelles

reported poor adherence among patients living alone, living in big cities or those who are heavy drinkers (Bovet, Burnier, Madeleine et al., 2002).

#### ***2.4 An adherence review of chronic communicable diseases***

Adherence to medication is a challenge for the implementation of long-term treatment programs. The literature on TB and HIV/AIDS provides a valuable insight into these challenges (Osterber & Blascke, 2005; WHO, 2006).

##### **2.4. 1 Factors affecting adherence to TB medication**

The directly observed therapy short course (DOTS) has been widely used in the management of TB. In this strategy someone supervises the patient actually taking the drugs. Previously the main challenge in using these methods in HIV patients was that ARVs were taken three to four times per day and therefore directly observed treatments (DOTS) or directly observed anti-retroviral treatment (DART) was not feasible. Once medication becomes available that can be taken once or twice per day, then DOTS or DART can be considered to be used for adherence to ARVs (Jani, 2004).

Munro, Lewin, Smith, Engel & Volmik (2007a) report that adherence to a TB treatment course is a complex and dynamic phenomena; there are various factors that influence non-adherence behavior. TB patients' treatment regimens are influenced by interactive factors such as health services knowledge, belief about treatment, side-effects, attitudes, family, community, and household support, cultural and health service. TB control requires a high level of adherence to medication. Therefore, poor adherence may lead to an inadequate outcome, such as prolonged

infectiousness, subsequent reactivation of the disease, or development of drug resistance and death (Munro et al., 2007a).

#### **2.4.2 Factors affecting adherence to ART**

The findings of a study by Feuerstein, Labbe & Kuczmierzyk (1986) showed that 67% of the physicians maintain that poor adherence of patients was due to them being uncooperative, 26% said doctors are responsible for poor adherence of their patients; 40% attributed poor adherence to the patients' failure to understand their recommendations. Kent & Dalgleish (1983) revealed that 60% of patients misinterpreted their doctors' instructions and that doctors overrate their patients' knowledge about the disease. They further reported that the written information on the label of medicine bottles was not easy to read and tended to be vague.

According to Goudge (2004), the characteristics of ARV regimens contribute to non-adherence because the regimens are complex and comprise many pills per day taken at different times with different dietary requirements. Many of these medicines have unpleasant side-effects, such as diarrhea, nausea, vomiting, and peripheral neuropathy. Weiser et al. (2003) in their study of 109 patients in Botswana showed that most adherence rates in Botswana compared favorably with those in most developed countries because the country had overcome the barriers to ARV adherence, namely, financial constraints, stigma, traveling costs, and side-effects. The Botswana Government has adopted several initiatives to improve adherence to ARVs, including strengthening health infrastructures for delivering care, increasing the availability of clinical and laboratory monitoring, access to ARVs in the public sector and improving the distribution of ARVs (Weiser et al. 2003). In addition, to address financial constraints, the Government of Botswana has been providing free ARV therapy doctors, co-located doctors, pharmacists and

social workers at the resource centers to reduce traveling cost and have been giving small scale projects to patients to help cope with additional cost being on ARV. Furthermore, to address the issue of stigma and discrimination, most of health programs in Botswana try to encourage disclosure to at least one person who can become a treatment supporter (WHO, 2006).

## ***2.5 Theories used to explain antihypertensive medication adherence***

The researcher selected some theories in order to get a good understanding of why some hypertensive patients do not adhere to their medications. Furthermore, these theories guided and directed the researcher to identify appropriate interventions that should improve adherence. The Health Promotion and Behavioral Change Model Theories selected include the Health Belief Model, Leys' Model of Compliance, and the Theory of Planned Behavior.

### **2.5.1 Health Promotion and Behavioral Change Model**

Health promotion is the process of enabling people to increase control over, and to improve their health. To reach a state of complete physical, mental and social well-being an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Therefore, health promotion is not just the responsibilities of the health sector, but goes beyond health lifestyle to well-being (Ottawa Charter, 1986).

### **2.5.2 Health Belief Model (HBM)**

Historically this model was developed by a group of social psychologists in the USA public health field in the 1950s. In 1954 Becker modified the model. The researchers were driven by the need to explain the surprising failure of public participation in free health screening programs at that time. The social psychologists developed this model to identify the major concern of

implementing the USA public health services program to identify factors that prohibited or motivated patients to utilize free health screening services (Rosenstock, Stretcher & Becker, 1988).

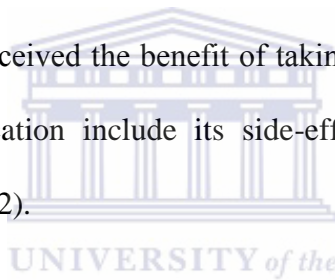
The HBM includes four components: perceived susceptibility (for example, hypertension); perceived severity of the condition and consequences; perceived benefits of taking medication and modifying their lifestyle to reduce the risk; perceived barriers (for example, costs involved in carrying out the behavior) and cues to action (strategies to activate readiness through health education and counseling to undertake health action); and self-efficacy (confidence in one's ability to take action) (Glanz et al., 2002; Hazavehei, Taghdisi & Saidi, 2007).

The model postulates that health behavior towards disease or treatment is influenced by the extent to which individuals believe they are susceptible to a disease and how severe they believe the disease is, the benefits they will accrue if they comply with the required health behavior and all barriers in their ways of adopting health behaviors.

Perceived susceptibility refers to patients' view on the risk of having a disease, such as hypertension, or the consequence of non-adherence to medication that will result in complications, such as heart failure, renal failure or stroke (Glanz et al., 2002). Since hypertension is an asymptomatic disease patients must believe that they are susceptible to develop complications with or without experiencing specific symptoms; such perceptions are based on sound knowledge of the disease. However, patients who feel that they are susceptible to hypertension and its sequelae would be more likely adhere to medication.

Perceived severity refers to the extent to which a person judges the seriousness of the disease. Persons who perceive hypertension to be a serious disease would be more likely to adhere to medical treatment and modify their lifestyles compared to those who do not perceive the disease to be serious (Glanz et al., 2002).

Persons who believe that they are not susceptible to hypertension or deny the existence of hypertension do not see the need to take their antihypertensive medication as prescribed or to modify their lifestyle. Patients who perceive benefits from adopting particular behaviors are more likely to demonstrate the required behavior compared to those who do not perceive such benefits (Green & Kreuter, 2000). According to Bension & Britten (2002) patients who adhere to antihypertensive medication perceived the benefit of taking medication. Patients' perceptions of barriers to taking their medication include its side-effects, complex dosing, and socio-economic factors (Glanz et al., 2002).



The HBM underscores that most patients take action to prevent ill-health conditions only if they feel that they are susceptible to such conditions. This shows that patients will take only action if they feel that poor adherence will result in treatment failure. Additionally, patients will act if they feel that such action will reduce their susceptibility to ill-health conditions. This demonstrates that patients take action if they feel that the anticipated barriers to take action are out-weighted by the perceived benefits (Ogden, 2000). Heidarina, 2002, and Becker, 1974 (cited by Hazavehei, Taghdisi & Saidi 2007) respectively explain that the HBM is a model for health educators. The use of this model results in effective behavioral changes and leads to increased healthy behaviors.



## **2.5.2 Leys' Cognitive Model of Compliance**

Ley's model can overcome non-adherence by a combination of various factors. For example, a patient's satisfaction with consultation with HCPs, a patient's ability to understand the information provided and the ability to recall the information provided (Ogden, 2004).

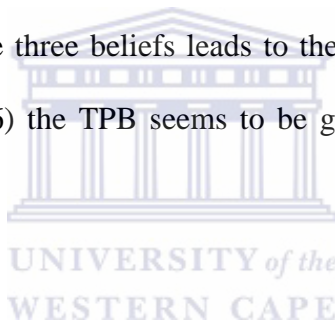
### ***2.5.2.1 Patients' satisfaction, understanding and recall***

According to Munro, Lewin, Swart and Volmink, (2007b) studies show that patients' satisfaction stems from various components of consultation; in particular emotional support and understanding, behavioral aspects, such as prescribing, adequate explanations and competence from the HCPs at health facilities. Ogden (2004) stated that patients were reported to be more satisfied and adhere to treatment better if they understand the disease process well. It is therefore important for doctors and pharmacists to provide the patients with adequate information regarding the disease prognosis, impact of prescribed treatment, and potential adverse effects of the medication if they are to prevent non-adherence.

It is imperative that HCPs give clear instructions to patients and ensure that the patients understand these instructions. (Frank & Miramones, 2007). Non-adherence to medication may occur because of a lack of understanding of information provided by HCPs (Ogden 2000). Ogden (2000) describes patient recall as the extent to which patients are able to remember the information provided by HCPs. He maintains that patients' tend to recall information that was clearly explained to them and this consequently reduces non-adherence.

### **2.5.3 Theory of Planned Behavior (TPB)**

This theory focuses on the link between attitude and behavior. The theory predicts deliberate behavior based on the understanding that behavior can be planned. This theory can assist HCPs on how they can change the behavior of their clients/patients (Armitage & Conner, 2001). The theory explains that human action is guided by three considerations: behavioral beliefs; normative beliefs and control beliefs (Ajzen, 2008). These three considerations are important in situations when a person's behavior needs to be changed. The behavioral beliefs produce favorable or non-favorable attitudes towards the behavior; the normative beliefs result in perceived social pressure or subjective norms. Control beliefs give rise to perceived behavior control. The interaction among the three beliefs leads to the formation of a behavior intention. According to Godin & Kok (1996) the TPB seems to be good for the explaining of behavior intention.



### **2.6 Conclusion**

Most of the studies reviewed highlight the fact that the causes of non-adherence are a combination of biomedical, psychosocial, and socio-economic factors, as well as the attitudes and behaviors of HCPs and patients. Furthermore, the literature reviewed highlights that non-adherence to antihypertensive medications is not unique to specific regions as it is a common problem in many parts of the world. Additionally, the literature shows that there is a big difference between developed and developing nations regarding the problem of non-adherent with antihypertensive medication. The various findings of studies described above encouraged the researcher to investigate and contextualize perceptions of non-adherent hypertensive patients about the factors that influence their non-adherence to antihypertensive medication.

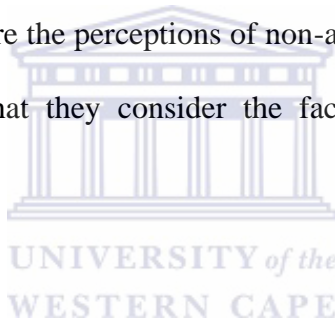
## CHAPTER 3: AIMS, OBJECTIVES AND METHODOLOGY

### *3. Introduction*

The purpose of this study was to explore the perceptions of non-adherent hypertensive patients and the reasons why they are not adhering to medication. This chapter provides a comprehensive description of the research methodology used during the research. A detailed description of the respondents, research design, study population, data collection, analysis procedure, ethical implications, and limitations, are presented.

### *3.1 Study aims*

The aim of this study was to explore the perceptions of non-adherent hypertensive patients in the Windhoek district, looking at what they consider the factors influencing non-adherence to antihypertensive medication.



### *3.2 Objectives*

- To explore with hypertensive patients their perceptions about the consequences of not taking antihypertensive medication as prescribed.
- To explore factors related to patients' experiences with health care services that influence adherence behavior.
- To explore the additional barriers faced by patients in adhering to antihypertensive medication regimen.

### **3.3 Methodology**

#### **3.3.1 Study design**

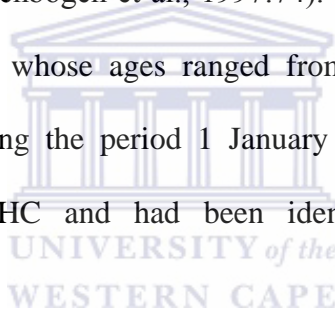
Burns & Grove (2001) refer to research design as a clearly defined structure within which the study is implemented. This is a qualitative study using an explorative design. This approach was selected in relation to the research objectives. The purpose of the study was to gain an understanding of the perception of non-adherent hypertensive patients in Katutura Township about the factors that influence their non-adherence. Morse & Field (1998) define qualitative research as an inclusive, holistic, subjective and process-oriented research method used to describe and develop theory pertaining to a phenomenon or setting. Qualitative research is an open explorative way of conducting research which encourages respondents to express their experiences, feelings and views in their terms (Scheepers, Goldstein, Shabalala & Shongue, 2003). A qualitative research method also ensures the acquisition of in-depth information from respondents, since it solicits the background on relevant knowledge and beliefs and provides the perception of the respondents for non-adherence to medication.

An exploratory qualitative study was conducted using in-depth interviews to explore the respondents' perceptions about the factors that influence non-adherence to antihypertensive medication in the Windhoek District. This study was conducted to obtain data of diverse patients' experiences and views. According to Pope & Mays (1995) qualitative research is best suited to studies that aim at exploring perceptions, behaviors, and people's experience. Furthermore, Terre Blanche, Durrheim & Painter (2006) explain that people's feelings and experience cannot be measured in numerical terms, as is the case in quantitative studies, thus such measurement is obtained in qualitative studies. In-depth interviews were chosen because

they are believed to yield high response rates, as well as offering rich and more complex data (Baum, 2008). In-depth interviews are said to be flexible ways of obtaining a wide range of detailed information when seeking to learn more about patients' experiences (Robson, 1993). The researcher therefore employed an individual in-depth interview approach since it provided respondents with the opportunity to describe their experiences in their own words (Scheepers et al., 2003).

### **3.3.2 Study population**

A study population is defined as a “group of individuals inhabiting a specific area or sharing specific characteristics” (Katzenellenbogen et al., 1997:74). The study population for this study included male and female adults whose ages ranged from 35-69 years and who had been diagnosed with hypertension during the period 1 January 2006 to 31 December 2007. The respondents all attended the KHC and had been identified as being non-adherent to antihypertensive medications.



#### ***3.3.2.1 Inclusion and exclusion criteria***

According to Burns and Grove (2001) inclusion criteria are the sampling requirements identified by the researcher that must be present for an individual to be included in the sample. An exclusion criterion is a sampling requirement that eliminates or excludes individuals from being in the sample. The inclusion criteria were:

- Patients had to have their latest blood pressure (BP) recording of more than 150/90mmHg in the past six months which had been taken by senior registered nurses, who also coordinate hypertensive clinics at the KHC.
- Only residents of the Windhoek District could participate in the study.

- Patients who speak one or more of the following languages could participate namely, Otjiherero, Oshiwambo, Afrikaans and English language, since the researcher is conversant in them.

The exclusion criteria were:

- Patients who were on secondary prevention following cardiac events, or stroke.
- Patients with cognitive impairments.
- Patients with cardiac pacemakers.

The reason for excluding these individuals was that their circumstances were more complex and could affect their perception.

### **3.3.3 Sampling procedure and sample size**

A study sample is defined as a group of individuals who represent the entire study population as it will be cumbersome and expensive to include everyone in a study (Hedge, 1978). A purposeful sample is defined as the selection of the population based on the needs of the study with the focus on people who have knowledge and experience of the topic (Coyne, 1997). The study used purposeful sampling to get a wide and true representation of the experiences and perspectives of non-adherent patients at the KHC. Respondents were purposefully selected by senior registered nurses at the KHC, who are knowledgeable about hypertensive management and treatment.

The said nurses explained the purpose, aims and objectives of the study to potential respondents who came for follow-up with clinical histories of multiple readmissions due to uncontrolled high BP, and those who missed more than two follow-up visits. In February 2011, the potential respondents were approached by the researcher for possible participation in the study. In the first week of March 2011 the researcher met with the eligible respondents who met the inclusion

criteria and gave an explanation of the purpose and aims of the study. Based on the dates of follow-up appointments each respondent was given a date for the interview. Those individuals who were willing to share their knowledge and experiences regarding the factors that influence non-adherence to antihypertensive medication participated in the study during March and April 2011.

### **3.3.4 Description of the respondents**

The sample size consisted of eight non-adherent hypertensive patients (three males and five females). The age of those who participated in the study ranged from 35-68. Five respondents are married, one is a widow and two are single. Three respondents speak Otjiherero; two speak Damara, one speaks Afrikaans and the remaining two speak Oshiwambo. Among the eight respondents only one female and one male had completed secondary school while the majority have pre and high primary education. Most of the respondents are employed, but they are low earners. Of those not employed, one is unemployed, one is a pensioner, and one a scholar. This sample therefore covers varied family circumstances, with the respondents having either a low income or none at all.

The diversity of the sample was done in order to get different points of view and potential experiences about issues influencing non-adherence to prescribed antihypertensive medication. The sample population in this study did not represent the general population but were indicative of many people who live in Katutura Township.

### ***3.4 Data collection tool***

An interview guide (Appendix 1) was formulated based on adherence literature. The administration of the interview guide was preceded by providing respondents with an information sheet and consent form which were in English in order to facilitate understanding of the contents (Appendices 2 and 3). However, the contents of both were explained to the respondents in a language they could understand.

#### **3.4.1 Data collection methods**

Data were collected by the researcher by means of in-depth face-to-face interviews. An in-depth interview is a good research technique for obtaining information about patients experience and feelings (Bowling, 1997). Moreover, it is very useful because it uncovers new ideas that were not anticipated by the research from the outset (Pope & May, 1995). The respondents also do not need to be literate as the questions can be clarified through probing during the interview (Verity & Murray, 1999).

The interviews were conducted in the conference room at the KHC. The room was clean, well ventilated with an air conditioner, and away from possible noises. Respondent's privacy was assured as the door was closed during the interviews. A digital voice recorder was used to record the interviews.

Each interview commenced with an introduction and brief explanation of the purpose the study and its research confidentiality. After obtaining the respondent's consent each one was encouraged to talk freely; if they had brought relevant points spontaneously, the order of questions were varied to maintain the flow of sessions. Probing questions were used to stimulate



conversation that encouraged the respondents to share detailed information during the interviews. Each respondent was asked to select a preferred language for the interview. Note-taking was done by an assistant researcher during the interviews to incorporate and correlate field note information with the taped-recorded data in order to meet the requirement of trustworthiness. The field notes served to supplement the data that could not be portrayed by the audio-taped interviews, for example, non-verbal cues such as facial expressions and gestures. This allowed the researcher to better understand verbal responses (Robson, 1993).

The interviews were transcribed verbatim to ensure that no information was lost prior to data analysis. In order not to lose any meaningful information and to incorporate non-verbal data, such as the tone of the voice or facial expressions, the data were transcribed and analyzed straight after the interviews, and before the next interview takes place. Any interesting findings were incorporated into the next interview. Transcriptions were given to the respondents to check and verify the data, the same day after the interview was conducted. The transcribed data were translated to English by the researcher. Each interview lasted between 45-60 minutes. After the interview, each respondent was given N\$20.00 (R20.00 equivalent) taxi fee as a token of appreciation.

### **3.4.2 Data analysis**

According to Babbie & Mouton (2001) in qualitative studies, data analysis occurs concurrently with thematic analysis. The researcher used qualitative analysis techniques since the data were words and not numbers. This type of analysis entails uncovering a common pattern that is woven throughout an entire set of data (Gifford, undated) to give meaning to the findings. The five

stages of thematic analysis were followed: familiarization; identification; indexing; charting; and interpretation (Pope et al., 2000).

#### ***3.4.2.1 Familiarization***

During this stage, the researcher starts with immersion: reads the field notes, listens to the audio tapes in order to get a good grasp of all the data, and reviews the transcribed data with the aim of extracting key ideas and categories.

#### ***3.4.2.2 Identification***

The transcripts were read repeatedly by the researcher and research assistant to independently identify emergent themes. The identified key ideas and emerging themes were: lack of knowledge about hypertension; awareness of hypertension and antihypertensive medication; cultural beliefs and traditions; health service factors; broad social determinants factors. The latter were: treatment regimen; patient related factors; health service related factors; socioeconomic factors.

#### ***3.4.2.3 Indexing***

Themes from different groups were pooled together and integrated into common themes. The researcher and the research assistant met to compare their respective analyses. An on-going dialogue between the two contributed to the shaping of definite categories.

#### ***3.4.2.4 Charting***

To validate the categories meant they had to be compared with the established concepts in the reviewed literature. The researcher and the research assistant examined each interview line by line to identify relevant text units according to the established underlying categories.

#### ***3.4.2.5 Mapping and interpretation***

To ensure compatibility of the text categorizing, the researcher analyzed the entire transcript of each interview. The analysis of the data was done manually, as the sample size was not extensive enough to justify the use of software analysis (Pope et al., 2000). Since the aim of the study was to find perceptions of non-adherence about the factors that contribute to non-adherence to antihypertensive medication the analyses focused on negative rather than positive outcomes.

#### ***3.5. Rigor***

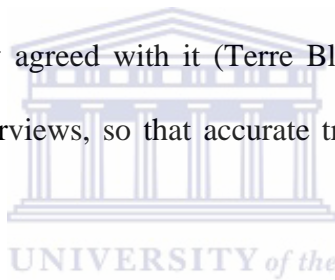
In qualitative research rigor is important to ensure that one's interpretations of the data are valid and reliable (Marshall & Rossman, 1995). The study used triangulation whereby the information from in-depth interviews with the respondents were triangulated with the field notes, audio tape recording, and literature reviewed. This enabled the researcher to see all aspects of issues being researched, and gain more rigorous and detailed information (Gifford, 1996). Field notes taken during data collection were part of the researcher's reflective process (Rose & Webb, 1998). In addition, the research assistant and the researcher summarized key points at the end of individual interviews to verify with respondents that their understanding and interpretation of their experiences, perceptions, and opinions, were accurate. Moreover, after each interview the researcher and the assistant discussed the observation to ensure there was consensus. The researcher forwarded the transcripts of the interviews to her supervisor during the course of data collection for confirmation on the quality of the interviews conducted.

#### ***3.6 Ethical considerations***

Ethics in research is all about the responsibility to respect the right of the respondent. Prior to the study, ethical approval was obtained from the University of Western Cape's Ethics Committee

and the Permanent Secretary of the Ministry of Health and Social Services in Windhoek gave permission to conduct the study. Additionally, verbal approval was obtained from the Regional Director of the Khomas Region responsible for the whole region, as well as the Windhoek District PHC supervisor.

All respondents, as stated in 3.3.5, were provided with information sheets in their preferred languages, to clearly explain the purpose, objectives, and procedures of the study that would be used. Verbal explanations were also given and respondents were assured of anonymity and confidentiality at all times. They were assured that participation was voluntary before they signed informed consent. The latter ensures that the respondents themselves understand what is expected from them and that they agreed with it (Terre Blanch, Durrheim, & Painter, 2006). Permission to tape record the interviews, so that accurate transcripts could be made, was also obtained from the respondents.



According to Neuman (2000), a researcher has a moral obligation to uphold confidentiality of data, which includes keeping information confidential from others in the field and not to distinguish members' names in the field notes. It is in this light that all transcripts were numbered from 1 to 8. The numbering is not linked to any numbering system used at the clinic therefore transcripts could not be traced to any person. The tapes and transcripts were kept under lock and key. The data were entered into the computer, and a pass word-protection for the files was used. The data were only accessed by the researcher.

### ***3.7 Limitations***

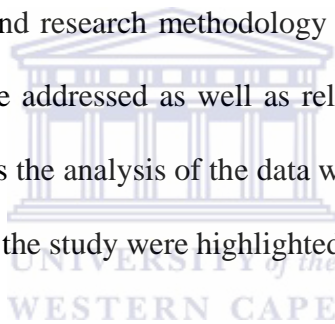
The sample size in this study was limited to eight respondents as this was a realistic sample for the purpose of a mini-thesis. As it a mini-thesis, it was inevitably limited, and so it did not reach

saturation. Moreover, the study was limited to those who met the inclusion criteria which meant that non-adherent patients who did not speak one of the following languages, namely, Otjiherero, Oshiwambo, Afrikaans and English, were excluded and valuable information may not have been gathered. Selection bias might have occurred since this was done by registered nurses.

The study was limited to non-adherent patients who receive their medication at the KHC, thus patients who had discontinued medication for any other reasons were excluded from the study, which may have meant that additional explanations of poor adherence was missed.

### ***3.8 Conclusion***

In this chapter the type of study and research methodology used were discussed. Methods of sampling from the population were addressed as well as relevant research ethics. The research instrument was explained as well as the analysis of the data which involved the researcher and an assistant researcher. Limitations of the study were highlighted.



## CHAPTER 4: PRESENTATION OF RESULTS

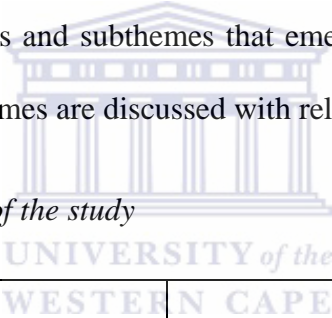
### 4. Introduction

In this chapter the collected data are presented and interpreted. An analysis of the content provided the researcher with themes and subthemes. Each theme is discussed with quotes from the respondents. The researcher used structured in-depth descriptive interviews to allow the respondents to fully express their perceptions and reasons why they do not always adhere to antihypertensive medication.

### 4.1 Themes and subthemes of the study

Table 4.1 contains the main themes and subthemes that emerged following the process of data analysis: Each theme and its subthemes are discussed with relevant quotes from the respondents.

*Table 4.1: Themes and subthemes of the study*



THEME	SUBTHEMES
Knowledge about hypertension	<ul style="list-style-type: none"><li>• Knowledge about causative factors</li><li>• Lack of knowledge about treatment for hypertension</li></ul>
Reasons for non-adherence to medication	<ul style="list-style-type: none"><li>• Impact on adherence</li><li>• Patients' beliefs about the type of treatment</li></ul>
Cultural beliefs and traditions	<ul style="list-style-type: none"><li>• Patients' cultural beliefs about the type of treatment</li></ul>

	<ul style="list-style-type: none"> <li>• Patients’ beliefs about the medication</li> <li>• Religious beliefs</li> </ul>
Health service factors	<ul style="list-style-type: none"> <li>• Quality of care</li> <li>• Language barrier and literacy</li> </ul>
Social determinant factors	<ul style="list-style-type: none"> <li>• Transport cost</li> <li>• Social support</li> <li>• Alcohol</li> </ul>

**4.1.1 Lack of knowledge about hypertension**

The study demonstrated that the respondents have little knowledge about the causes of the hypertension condition. This had a profound influence in the way they perceived the advice they were given. Their opinions and responses to the doctors’ advice and explanations varied, some perceived eating too salty food, fatty food and red meat as the cause of hypertension; while others did not accept the opinions of the doctor that the red meat is one of the causes of high BP. The following direct quotes of the respondents (in italics) illustrate these sentiments.

*“Hypertension is caused if you think too much and eat a lot of salty food”.*

*“I don’t agree with some of the causes such as eating red meat and fat. In the Herero custom, our staple food is sour milk, home-made butter, porridge and red meat. Therefore, it is difficult for someone to tell me not to eat red meat”.*

Hypertension may be asymptomatic for long periods which influences patients to not adhere to medication. The respondents expressed concerns that they were not sick but are now given

medication that makes them sick. In addition they had not been informed in advance of such side effects by their HCPs.

#### **4.1.1.1 Lack of knowledge about treatment for hypertension**

This study showed that most respondents also possess little knowledge and understanding of the hypertension condition and antihypertensive medication. This affected both their trust in the service and confidence in treatment. Some said doctors or nurses did not explain the importance of the medication and the benefits of taking it as prescribed. Others stated that the doctors added more pills or they decreased their medication without providing the reasons for the changes.

*“Some doctors change your medication without explaining or informing you that they added new pills”.*

Some said that the little knowledge they have about hypertension treatment was acquired from their children and from radio programs about health.

*“Miss Milka, anything I know about blood pressure I have been told by my daughter. The doctor or nurses did not tell me absolute anything.”*

As part of their awareness, some knew the consequences of non-adherence to antihypertensive medication.

*“I learn from radio station program that you will get stroke or die if you do not adhere to your medication”.*



## 4.1.2 Reasons for Non-Adherence

### 4.1.2.1 Impact on adherence

The majority did not know the names of the pills they were taking; some only knew the colors of the pills; only a few knew the duration of their medication course.

*“I am on hypertension medication, but I do not know the names of the pills I am taking, hahaha “*

*“I am taking two kinds of pills orange and brown, but the brown pills give me headache and the orange one is o.k.”*

These findings illustrate various reasons for missing or skipping medication. Despite a few respondents' awareness of the complications most tend to not to take their medication as prescribed for a range of reasons. These included: patients who took medication twice per day claimed to forget to take their medication compared to those who took it once daily; due to lack of knowledge about the medication effects patients modify their prescription and take the medications they wanted.

*“I am taking one small tablet in the evening. I am supposed to take these pills in the morning but.. (Pauses and plays with her health passport, smile), these pills have side effects, they make me sleepy and drowsy therefore I am taking them at night when I am going to bed”.*

*“I don't take the orange pills, it is giving me headaches. Panado is better, it controls blood pressure”.*

The respondents said they did not feel good about taking medication every day. Some believed the medication might cause other complications, such as heart failure; others were of the opinion that the medication is a poison. Furthermore, they claimed the medication is not helping as their BP remained unstable. These findings are supported by the following comments:

*“I believe this medication is not effective because when I am going for a follow-up my blood pressure is always high”*

Sometimes the health center does not have stocks of medication which discourages patients; they then decide that they could cope without the medication. Some stated that they did not see the need to take medication if they did not feel sick. Others did not feel comfortable taking medication and forget when they are too busy or they forget to take supplies when they travel. Some reported that they skipped or reduced the monthly doses to save pills for use for two months to avoid transport costs; others took breaks as they did not feel it was necessary to take their medication every day when they felt their BP was normal.

*“Fear that taking medication every day will cause more problems to my heart”.*

*“There are days that I forget to take my pills when I feel good and healthy. Also if I feel my blood pressure is now normal.... Sometimes, if my blood pressure is normal, I stop the medication and use the herbal pills for one or two weeks because I do not want to use hypertension medication all the time”.*

Furthermore, they had not been informed in advance about this by their HCPs and the majority said they experienced some adverse effects with antihypertensive medication; others claimed that the medication caused an undesired situation especially when among other people at social

events. Since these side-effects negatively affect their daily routine activities and also make them sick, the findings illustrate that they simply opted to skip medication to avoid the side-effects.

*“The pills make me weak, sleepy tired and to urinate frequently”.*

*“I do not want to poison my body. We are taking other medication but we don’t get side effects like with these pills.”*

*“When I planned to visit my friend or to go for social events I skip my pills that day to avoid frequent urination”*

There were also concerns expressed about what was seen as a dangerous impact of the antihypertensive medication. Several were suspicious that the medication is poisonous and will damage their blood system. Others took breaks from taking their medication for some time and resumed when they again felt the complications as they believed a continuous use of the medication will kill them ultimately or may cause addiction. Some had given up their hope for life since they were discouraged by cases where people who were adherent to their medication still died.

*“I do not trust this hypertension medication, because I feel like taking drugs”.*

*“I believe this medication is only controlling blood pressure but not cure”.*

### **4.1.3 Cultural beliefs and tradition**

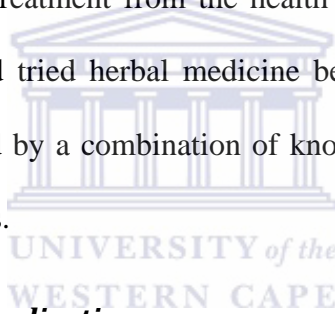
#### ***4.1.3.1 Patients’ cultural beliefs about the type of treatment***

The findings demonstrated that some respondents’ treatment was affected by their strong cultural beliefs or the cultural influence of the people surrounding them. Since some of the respondents

were desperate to be cured, they tend to take whatever advice they can from people whom they trust and respect in the society. These include traditional healers who prescribe herbal rather than allopathic medication. This preference for the former remedies influenced non-adherence to antihypertensive medication.

*“My family did not believe that I was having hypertension but horse headache and they used to give me traditional herbal medicine (green leaves) and Aloe-vera stew, half cup in the morning and in the evening”.*

The study illustrates the varied perception of the respondents in relation to the type of treatment; some expressed a preference for treatment from the health facilities while others had initially approached traditional healers and tried herbal medicine before going to the health facilities. These preferences were influenced by a combination of knowledge, or lack of knowledge they possessed, and their cultural beliefs.



#### **4.1.3.2 Patients' beliefs about medication**

Some respondents believed traditional healers' medication, such as cayenne pepper and wild potatoes, work well and were taking it more than prescribed allopathic drugs because they believe them to be more effective.

*“My friend got advice from traditional healer to take cayenne pepper. Since then he stopped taking the hypertensive medication and his blood pressure is normal”.*

*“Ooo.....” smiled, “There is this new spice that people are selling at the bus stops that lower high blood pressure”. Some days I do not take my pills. I skip two or three days while using these spices”.*

#### **4.1.3.3 Religious beliefs**

A few respondents claimed that their medication was interrupted by pastors who advised them to raise their faith and claim healing from God. They added that when their health improvements did not materialize it was possibly because they did not demonstrate enough faith.

*“ ...but on Sunday I do not take my medication and spices, our pastor prays for us and give us holy water which is also healing us”.*

#### **4.1.4 Health service factors**

Issues related to health services are described as factors associated with the quality of care, resources, waiting time, distance to health center and follow-up appointments.

##### **4.1.4.1 Quality of care**

The respondents stated that they were not happy with the service they received at the health centers and this influenced their non-adherence to their medications. They also said they were not happy with the attitudes and behavior of the nurses towards the patients at the health center. Some nurses were reported as having an unfriendly attitude towards the patients as they shouted at them and did not greet them or ask them about their health conditions. At times they allegedly sat in their consulting rooms and discussed their private matters while sick people had to wait in a queue. The respondents raised the concern about the lack of provision for sick patients and for those who came for follow-up appointments. Everybody had to join the same queue, which caused long waiting periods. They perceived these as factors that influenced non-adherence as they ended up feeling inhuman and socially unfit.

*“This health center is always overcrowded and there are few nurses, but the nurses do not care. Nurses are doing shopping during working hours while the patients are waiting for them and (the nurses) also take long breaks”.*

*“Ms. Milka! This nurse sometimes they make me angry, (frowns) because they send you around and their tone is not friendly. They are working very, very slow and they are very inconsiderate”.*

*“My concern is the set-up at the center is not well organized, people who come for follow-up visit and those who are sick are sitting in the same queue.*

Another finding, however, illustrated that special provision was made for the elderly at the health center to avoid them having a long waiting time in the queue. This encouraged them to come for follow-up appointments.

*” Sister, Now the service is better because we have our own waiting area for the elderly and we do not spend a lot of time in the queue and the service is free of charge”.*

The lack of availability and inadequate infrastructure and resources, such as hypertension medication, waiting areas, toilets, and shortage of nurses, were also contributing factors to non-adherence to medication at the KHC. KHC is the only health center in the township. The clinic has insufficient staff and that causes long waiting times and overcrowding of patients. The long waiting makes patients frustrated and the overcrowding creates an uncomfortable environment. These circumstances are perceived by the respondents as additional contributing factors to non-adherence.

*“This health center is always over crowded and the nurses are few”.*

This study shows that the time factor at the health center is an issue of concern. Respondents stated that they spend on an average three to four hours waiting to be seen at the KHC to obtain treatment, unless they fall in the category of the elderly. This poses a serious challenge as they were also expected to be at work, yet they were also required to be in the long winding queues. Furthermore, they claimed that nurses did not respect or empathize with the patients for the hours they spend at the health center on empty stomachs. This was given as an indication that long waiting times have a negative impact on adherence:

*“...if you come sometime round six pm it is very difficult to find these nurses, (shakes head and closes eyes). The health center closes at seven pm, but after five most of the nurses are not available and this very much frustrating”.*

*“I am sorry! However, I am not happy with the service due to the following reasons: I am working and if I come to the clinic, I have to wait for hours only to be checked for my blood pressure and be told to go to the pharmacy to collect the medication. It is really frustrating”.*

They stated they were concerned since they were seen by the doctor after three months and that they expected better services from them. They complained that the doctors do not have time to spend with patients to give health education and listen to their problems. This further influenced non-adherence.

*“....you see the doctor after three months and he/she does not even examine or talk to patients”*

They claimed that follow-up appointments were imposed on them and that this also contributed to non-adherence. Lack of patient involvement in treatment planning resulted in non-attendance at the follow-up appointments because the dates were not convenient for patients' schedules. Appointments are often given at times when patients have to be at work and this hampers their attendance.

*“The nurses give follow-up dates without discussing it with you but the time is depending on the patients”*

*“My boss is not supportive at all. Therefore I am experiencing difficulties to get off from my work, to avoid losing my job; I am going for my follow-ups only after 5PM”.*

#### **4.1.4.2 Language barrier and illiteracy**

The study showed that patients also failed to adhere to medication due to language barriers and an inability to read the written instruction on their prescriptions. Since some patients did not understand English they experienced communication problems when addressed in this foreign language despite it being the national language of communication. This discouraged them from attending follow-up visits to the health facility. There are many foreign doctors and pharmacists who do not speak the local languages and therefore use English and this was frustrating for the patients. At times patients failed to properly understand the written instructions and this also resulted in non-adherence.



*“All the pharmacists are foreigners and they explain everything in English and this is also a challenge for the patients who do not understand English or who cannot read”.*

#### **4.1.5 Broad social determinants factors**

The study showed that various social determinants influence adherence to antihypertensive medication. These include poverty, transport cost, social support and alcohol abuse. The findings in this study demonstrated that transport costs were a problem influencing non-adherence to follow-up appointments. The underlying causes of this problem were described as being unemployment and low income. Some patients, who live in new settlement areas, do not have access to public transport and this makes it difficult to go for follow-up visits. Most respondents stated they had to walk between five to 12km to and from the health center which hampered them in accessing treatment. They also, at times postponed their appointments during harsh weather.

*“Ms. Milka!! Living in Windhoek is a big challenge and with the little salary that I get I cannot afford to take taxi every time.”*

*“I walk to the health center to save money for my family”. “I am the only bread winner in my family; therefore I can’t afford to spend money on taxi”. The Health Center is far from my house and it takes me one and half hour to reach the Health Center .*

*“Smile ...but because I am skipping and sometimes missing to take my pills, I am always having pills at home, therefore if I missed my appointment is not a big deal”.*

All the respondents said that they have supportive families who had accepted their hypertension condition. The families reminded them of their follow-up appointment dates and some accompany them to the health centers. Some families make sure that food is available for their hypertensive relatives. However, the support did not include monitoring whether they take the medication as prescribed. Therefore, adherence to the medication has not been influenced by the support they received.

The study also showed that some respondents led unhealthy lifestyles even though they are on antihypertensive medication. They confirmed that they use alcohol which affected their adherence as when they use alcohol they tend to forget to take their medications. They claimed that they used ‘hot substances’, such as Richelieu brandy or whisky, since these spirits are believed to control BP. Others said that they did not want to mix antihypertensive medication with alcohol.

*“Yes, I am taking alcohol, but my doctor informed me that if I take hot stuff like Richelieu or whisky they will lower blood pressure while the beer raised my blood pressure”.*

*“...when I take alcohol I do skip or even forget to take my medication.”*

*“...I believe I can't mix alcohol with pills, this will give me more problems”.*

## ***4.2 Conclusion***

In this chapter, the researcher presented the eight respondents' views shared during the in-depth individual interviews. Five themes with subthemes emerged from the data analysis. In the next chapter a discussion on the data, in terms of aims, objectives and the literature consulted, is presented.



## CHAPTER 5: DISCUSSION

### *5. Introduction*

The aim of this study was to explore the perceptions of non-adherent hypertensive patients and the reasons why they are not adhering to antihypertensive medication at the Katutura Health Center (KHC). The qualitative study enabled the researcher to conduct in-depth individual interviews to obtain information on various factors that influence non-adherence to antihypertensive medication.

In this study the literature reviewed was used to compare the current study's results with that of other literature and to identify similarities, differences, and the unique contribution of the research. These referential checks also enhance the scientific trustworthiness of the research.

Five main themes emerged following the process of data analysis. Each theme is discussed with relevant literature cited as a control to the findings. The main perceived factors that contribute to non-adherence are: lack of knowledge about hypertension; reasons for non-adherence to antihypertensive medication; cultural beliefs and traditions; health service factors; social determinants factors. These findings concurred with various findings of studies conducted in different countries.

#### *5.1 Lack of knowledge about hypertension*

Poor knowledge about causes of hypertension among patients could lead to the creation of many misconceptions and delays in accessing, or seeking, treatment and poor adherence to medication.

The study found that the hypertensive patients interviewed possessed limited knowledge about hypertension. Furthermore, what they knew often came from people outside the health services.

This outside source of knowledge is in line with the findings of Iyalomhe & Iyalomhe (2010) and Fina Lubaki (2009) who indicated that the little knowledge that patients have regarding hypertension was acquired from sources other than doctor and nurses, such as radio programs on health, and talking to others during follow-up visits at a health center. The findings of a study by Park (2004) support this as most doctors in the Park study did not explain the possible causes of hypertension to their patients.

The current study also revealed a discrepancy in the awareness of the respondents about the causes of hypertension. Most perceived diet (salt and red meat) to be the causes, while others perceived psychological and financial problems to be contributing factors.

The differing views among the respondents are not unusual. A qualitative study done among Europeans and West Indian individuals who came to England as young adults illustrated the knowledge they have on the causes of hypertension. They claimed that stress or worry (illness, death in family, relationship problem and unemployment) heredity, obesity and diet are among the causes of hypertension. Their rationale for these different perceptions is based on the doctors' explanations of causes and their understanding about the condition (Morgan & Watkin, 1988).

In the current study, those who identified the risk factors as being consuming red meat, too salty and fatty food, did not know the reasons why they should reduce them. Some respondents argued that red meat is their staple food therefore they were reluctant to stop eating it. Other respondents stated that they did not understand the health-care provider when they were told that consumption of red meat leads to hypertension. They justified this confusion by pointing out that on the salary they earn they cannot afford to buy red meat. Since no rational explanations were given to patients, it appeared that patients continue with their diets.

As the information about hypertension was limited, the motivation to change their lifestyles was also limited. For example, Gascon, Sanchez-Ortuno, Llor et al. (2004) stated that the most common lifestyle changes recommended to patients were to reduce salt intake and to carry out some exercises. However, the authors said that there were no rational explanations provided by physicians on why these changes were beneficial. This information was considered by patients to be too general and not tailored to individual needs.

The limited information on how to manage their hypertension in the current study is not surprising as the management of hypertension at KHC focuses primarily on the treatment itself, not the explanations about it. Consequently, in addition to the limited information on the causes of hypertension, there is lack of information given about the importance of medication, and only a few respondents reported being given health education on healthy lifestyles. Given this lack of information, it is difficult for patients to understand the importance of adhering to medication and to changing their lifestyles.

The limited information given to patients in this study could be attributed to the fact that some health-care providers, especially doctors and pharmacists, failed to comply with the Guidelines for Management for Hypertension (MOHSS, 2003). These instructions direct all out-patient nurses who do screening to familiarize themselves with the contents of the guidelines. The guidelines also stipulate that the pharmacist should explain to the patient the benefits of taking the medication as prescribed, the consequences of not doing so, and the side-effects of the medications. However, it appeared that some nurses and pharmacists were not familiar with the guidelines and this resulted in patients receiving inadequate information.

The recommendations in Namibia are in line with global recommendations. According to the WHO (2003b), to prevent consequences of a long-term chronic condition, medicine should be used appropriately. To improve the overall quality of treatment and adherence, more effort by health professionals is required. The pharmacists are required to provide information and counseling to the community on the importance of the medication, to monitor a patient's ability to take medication correctly and to adhere to medication. Furthermore, they need to monitor the treatment and identify side-effects in collaboration with the patients, nurses and doctors. The WHO (2003b) concludes that through the implementation of therapeutic care, a pharmacist could prevent or minimize side-effects that influence non-adherence to medication.

Ley's cognitive model of compliance (CMC) that postulates that compliance is influenced and can be predicted by three factors: a patient's satisfaction of the whole consultation process with the healthcare provider; the extent of his/her understanding of the gathered information; and his/her ability to remember all this information (Ogden 2004), is of relevance to these findings. The model explains that in order for a patient to adhere to medication, the health-care providers should educate patients about the causes of the disease, prognosis and the benefit of medication. If patients understand the disease, medication and the importance of taking the medication at the time prescribed as well as the consequences of non-adherence to medication, they will be satisfied and this will motivate them to comply with their medication regimen. Therefore, health-care providers should use this model to ensure that patients fully understand the information they received.

In conclusion, the study demonstrated clearly that lack of information by the health-care providers had a significant impact on the behavior of the respondents, a pattern that appears to be

replicated in other contexts as well. If doctors and nurses provided health education and individual counseling effectively to patients immediately upon being diagnosed with hypertension as well as during their follow-up visits, then patients would have adequate knowledge on the hypertensive condition, which will in turn influence the way they will respond to their condition.

### ***5.2 Reasons for non-adherence to antihypertensive medications***

Despite the limited information provided, most hypertensive patients do recognize the potential seriousness of their condition and the need to adhere to their medication. This was demonstrated, for example, in Morgan & Watkin's (1988) study, which showed that respondents were aware of the consequences of non-adherence of hypertensive medication, reporting that they will die if they have uncontrolled hypertension and that the medication controls their BP.

Yet there were many reasons given for non-adherence, reasons that included but went beyond inadequate information. This was illustrated in a cross-sectional descriptive comparative study done by Palanisamy & Sumathy (2009) who showed that the patients were not adhering to antihypertensive medication for the following reasons: side-effects, lack of effectiveness of the medication, frequent urination, if they feel sick they skipped the medication, they altered medication schedule for convenience, they stopped their medications to test whether they still need to take it, and some fasted once a month.

Another factor was lack of knowledge about the medication they were taking. The current study shows that the majority of the respondents only knew the colors of their pills but not the names as they referred to the little white or orange pills. This implies that the health-care providers did not explain to the patients the names of their medication or the effect and importance of each pill.



Therefore, through trial and error the respondents identified the pills that gave them problems and took their own decision by omitting certain pills, and only taking them when they feel sick.

The complexity of their medication regimes was also an issue. Studies done in South Africa, Nigeria, and the Democratic Republic of Congo are in line with the current study in that they reported that patients who took medication twice or more per day tended to forget to take their medication compared to those taking it once daily (Kabir 2006; Kagee,2004; Fina Lubaki, 2009). The current study showed that some health-care providers failed to explain to patients the various effects of medication, the importance of taking the medication according to the prescribed time, reasons why some patients experience uncontrolled high BP while adhering to medication and the consequences of not taking medication.

Claxton et al. (2001) reinforce the findings that complex regimens with frequent dosing and medication being taken at odd times increase the likelihood of poor adherence as patients are more likely to make mistakes.

Doubts about the effectiveness of medication also played a part. In the current study, some respondents were not keen to adhere to medication as they stated that their friends and family who adhered to medication had died.

The absence of symptoms was also a problem. The respondents in the current study failed to understand why they should take the medication for long periods if they do not feel sick. This led the patients not adhering to their medication if they did not have any symptoms of illness. The exploratory study conducted in South Africa by Kagee et al. (2007) had similar results. The

majority of non-adherent patients claimed that they were not sick as they did not have symptoms and that this influenced them not to adhere to medication.

Gascon, Sanchez-Ortuno, Llor et al. (2004) also supported the findings that due to lack of knowledge patients regarded taking antihypertensive medication as conditional on them experiencing the symptoms, while others tried to experiment by not taking the medication to see how it felt without them. As in the current study, the purpose of this was to reduce the prescribed doses or to stop taking the medication altogether.

Another factor was the beliefs held by patients that the medication might be addictive or create dependency. Jambedu (2006), Gascon, Sanchez-Ortuno, Llor et al. (2004) and Morgan & Watkin (1988) stated respectively that non-adherent patients have negative feelings toward antihypertensive medication as they perceived that the medication was damaging their bodies. This negative attitude confirmed the relevance of the Theory of Planned Behavior that explained that the intention to perform a certain action is influenced by attitude toward action (Armitage & Conner, 2001).

Lack of understanding about the side-effects was another important factor. This was demonstrated in a qualitative, descriptive study using focus group interviews by Fina Lubaki et al. (2009) in the Democratic Republic of Congo. Patients did not receive prior education about the possibility of side-effects and when they had them, they tried to solve the problems by changing or discontinuing the medication. Fina Lubaki (2009) also described the problems of side-effects, noting that hypertensive patients claimed that the nurses never warned them about the side-effects of the medications but only ordered them to come back to the clinics when they show the signs and symptoms of side-effects.

The current study also found that no information was given to patients regarding the possible side-effects of the medication. The respondents complained that the medication made them sicker and more unproductive than before; they claimed that when they informed the nurses about the problems they encountered, the nurses still encouraged them to continue taking their medications. Since patients respect and trust the health-care providers, they expect to be helped if they have problems. However, the respondents complained that the attitudes and the behaviors of the health workers discouraged and confused them. Some respondents stated that to avoid these problems, they skipped or modified their medications when participating in social events to avoid frequent urination while others stopped taking certain pills that they suspected to cause problems. For example, some respondents reported that they were supposed to take their medications only in the mornings but to avoid side-effects they take them in the evenings. This might have a negative impact on the medication's effectiveness.

Additional reasons for non-adherence that were noted in the literature, and that related more to daily life than medical complications are discussed in the respective studies of Osterberg & Blaschke (2005) and Kabir et al. (2004). Vrijens, Vincz, Kristanto, Urquhart & Burnier (2008) stated the most common reasons for missing doses among non-adherent patients were: forgetfulness, being too busy, unavailability of medication at the health centers and taking breaks as they did not feel comfortable taking the medication every day. Furthermore, most patients confirmed that they skipped or missed their medication two or three times per week while others were taking weekend holiday breaks. Wroth and Pathman (2006), in their study, showed the factors that influence patients to not adhere to medication were social events, traveling for work without the medication and home tasks. While the study of Simpson (2006) found the following factors: side-effects, polypharmacy (many different drugs), taking

medication more than once daily, high costs, negative attitudes of the health-care providers and poor knowledge about hypertension disease.

### ***5.3 Cultural beliefs and traditions***

The current study showed that cultural and religious beliefs have a strong influence on non-adherence. These include belief in traditional medicine and religion. This important aspect had been overlooked by the health-care providers in Katutura.

An example that highlights the impact of lack of knowledge is the study by Iyalomhe & Iyalomhe (2010). This shows that due to inadequate knowledge and understanding of the causes of hypertension, some respondents believed that it is caused by evil spirits, witches, enemies, or food poisoning, while others believed that it could be caused by excessive stress or worries. Furthermore, the authors argue that both uneducated and educated respondents were unacquainted with the symptoms of the disease. These factors contributed to their negative attitudes to medications and consequently their non-adherence to medication and to lifestyle change.

There are also many examples of patients believing that traditional medicine and natural herbs are the best treatment for hypertension. A study by Steyn & Levitt (1995-2005) provides an illustration of how the belief in traditional medicines, and home-brewed beer, as being more effective than antihypertensive medication, was a contributing factor to non-adherence. The findings that Gascon, Sanchez-Ortuno, Llor et al. (2004) report that show that patients have more confidence in herbal or natural remedies that they consider to be common knowledge, rather than in antihypertensive medication as a means of alleviating hypertension, serves as another example. In their study, even though patients were prescribed antihypertensive medication, due

to cultural influences and the family's strong beliefs, they preferred to use traditional medicine. Only when they become very sick and end up seeking medical assistance from the health facilities do they then use the hypertensive medication.

Morgan & Watkins' (1988) study supports this experience. Their study demonstrated how the belief by Western Indians in folk herbal remedies also resulted in less use of hypertensive medications. The patients in this study use herbal remedies as alternatives, but when their BP is high they revert to their hypertensive medications.

A study in the USA illustrated that a patient from India was prescribed antihypertensive treatment. Instead of following his doctor's prescription, he consulted a friend from his native country and replaced the prescription with homeopathic medication, a popular complementary and alternative traditional medication within India culture. He later became very sick and ended up in the hospital (Health Ed Blog, 2011). While the context and remedies are very different, this experience concurs with some cases in Katutura where patients diagnosed with hypertension see traditional healers recommended by family and community in the first instance, and only seek medical treatment when the condition is severe. The lack of trust in the medication, along with the belief that traditional medicines, such as wild potatoes, cayenne pepper and spices, are more effective in controlling high BP was cited as the reasons, together with their arguments that traditional herbal medicines do not have any adverse effects compared to the side effects of antihypertensive medication.

Religious beliefs were also identified in this study as a contributing factor to non-adherence. A number of respondents believe in the healing power of the holy water so instead of taking their medication they drink the holy water. By contrast, in Indonesia, the Islamic Malays believe in

fate that is determined by God, yet the religion itself encourages its followers to make an effort to seek help to treat their illness. According to the Malays if a person fails to seek medical help when sick or fails to adhere to medications it is considered a sin (Azlin, Hattas & Sharifa Ezat 2007).

#### ***5.4 Health service factors***

Issues related to health services are described as factors associated with the quality of care, waiting time, distance to health center and follow-up appointment. This study showed a poor quality of health service at KHC which influenced non-adherence to medication. Examples include poor communication between health-care providers and patients, imposing follow-up appointment on patients, shortage of nurses that contribute to long waiting hours, the assessment of BP and re-issued medication. Patients claimed that health workers do not inform them of the result of their BP readings and that they are only referred to the doctors when their blood pressure is high. Thus, they concluded that when they are not referred to their doctors, their blood pressure is normal. Hence, there is no need to take their medications. Also, the unavailability of repeated medications discourages them to continue with their medications. The negative attitudes of nurses towards patients e.g. not being keen to provide patients with time to ask questions or to listen to their problems, were noted as reasons why patients do not adhere to medication.

The current study concurred with the findings of Vermeire et al. (2001) which show that to improve adherence to antihypertensive medication the doctors should be friendly, approachable, encourage patient–doctor co-operation, ensure patient-centeredness, identify patients’ problems, and develop doctors’ teaching skills and respect patients culture, values and religion.

The respondents emphasized the negative attitude aspect of their care without referring to the constraints on the staff including shortage of human resources and high patient/nurse ratio per day. They also did not recognize the nurses' overloaded tasks, patients' negative attitudes towards the nurses, and poor working condition, such as insufficient consulting room space, insufficient budget and an insufficient number of ambulances. These aspects might trigger the poor communication of the nurses towards patients, and the tendency of nurses to vent their frustrations on their patients. This claim is supported by the MOHSS Health System Review (2008) and the ministry is working on improvement of the working conditions of the nurses.

Doctors have authority to adjust the patients' medication depending on the progress of their condition (MOHSS, 2003). However, the respondents commented on the doctors' failure to explain the reasons for these changes of medication, resulting in non-adherence by the patients.

These findings are in line with those of Kagee et al. (2007), the WHO (2003), and Myers (1999) who respectively stated that the attitudes and behaviors of health-care providers towards patients were contributing factors to non-adherence. Kagee et al. (2007) reported that when patients go for follow-up appointments and receive medication without being examined, it discouraged them from taking their medication and going for future follow-up appointment visits. One reason that this could be the case is that some physicians do not have sufficient time to physically and psychologically examine the patients and give counseling and education to them about their illnesses and the need for taking their medication on a regular basis.

Non-compliance to guidelines is not unique to Namibia. WHO (2003) explained that doctors are non-adherent to the WHO guidelines on anti-hypertension medication which impacts on adherence. Furthermore, WHO (2008) and Myers (1999) reinforce the findings that physicians

prefer to prescribe the latest medication on the market with the belief that it is more effective than the guideline recommended medication. However, they demonstrated that the medication is often more expensive and some patients cannot afford it, which consequently results in non-adherence.

Another critical issue that emerged from the study was that long waiting time contributed to non-adherence to medication. The study found that patients waited between three to five hours for service at the health center. This is one of the issues which featured prominently during the interview with all the respondents. According to the WHO (2006), public health facilities are known to be usually overcrowded and slow in service delivery. Studies done in countries like Tanzania and elsewhere cited long waiting times at health facilities as the key factor that contributes to non-adherence (WHO, 2006). This is a problem for patients because they have to leave their work unattended for this time. This is an indication that long waiting times have a negative impact on follow-up visits as well as adherence. Fina Lubika et.al, (2009) in their study stated that in their local hospital the hypertension clinic operates only once a week, with resulting long delays for the patients. Furthermore, the study revealed that the antihypertensive medication was limited at the clinic. Veimeire et al. (2006) reported on a meta-analysis of adherence aiding strategies and recommendations and in this study suggest that combinations of strategies are useful in improving adherence. Included in the findings were that one-on-one counseling or health educational strategies, such as verbal communication, have positive effects, while written information alone increases knowledge and decreases medication utilization errors but has no effect on adherence. Written information, with verbal reinforcement, enhances adherence more than written information alone. These findings are supported by the health promotion Health Belief Model, which notes that when patients understand the consequences of a proposed action



they are more likely to change their behavior, in this instance adhering to treatment; and the severity of the cause of action, that those who do not adhere to medication end up with severe complications or even dying.

### ***5.5 Broad social determinants factors***

The socioeconomic status of hypertension patients is believed to have a great impact on their ability to adhere to medication. The following factors were identified as contributing to non-adherence among the hypertensive patients: transport costs, social support, and alcohol affect on adherence to medication.

The respondents in the current study noted the difficulty and cost of getting to the health facility for their appointments. This was demonstrated in Kagee et al. (2007) who show that transport cost to the clinic for those living in poverty was an important factor limiting people's ability to adhere to medication. Due to lack of money, patients walked long distances to the health center or sometimes postponed or cancelled their appointments. Furthermore, the study revealed that patients experienced problems with getting time off work, as their conditions of employment did not include medical benefits. The study also reported that some patients were paid on an hourly basis and consequently the long waiting time discouraged them from reporting for follow-up appointments. The current study did not explore this in detail, but the cost and the implications regarding the respondents' work were clearly an issue.

The cost of health care is a concern that impacts on the use of health services in many contexts. The current study revealed that patients pay minimal users' fees of N\$3.00 (R3.00 equivalent) per visit, while pensioners are exempt. Therefore this was not raised as a problem. However in other contexts the cost of visits and/or medication can be a significant cause of non-adherence.

Examples included the study done by David (2006), where the high cost of prescription charges in the UK, Canada, and the USA, influenced non-adherence. David's (2006) study in the Seychelles Islands, however, supported the Namibian experience; it was found that despite the fact that patients receive free medication they still did not adhere to medication. Recognition of the problem, as discussed in relation to the health belief model is an important factor. Bovet, Burnier, Madeleine et al.(2002) reported that one of the reasons why patients in the Seychelles Islands do not adhere to medication is that they perceive hypertension as an unimportant health problem.

Financial constraints have been described as changing the way people respond to their condition. Wang et al. (2002, cited by Iyalomhe et al., 2010) stated that the heavy financial burden imposed on patients managing their hypertension created a fear of premature death; in addition addiction to medication causes challenging problems such as depression and anxiety. Rather than not taking treatment at all patients visit traditional healers who claim to have permanent cures of hypertension with no drug side-effects.

The family context is an important component in people's likelihood of being able to adhere to their treatment regimes. This study demonstrated that hypertensive patients had good caring and supportive families. The families encouraged them to go for follow-up visits, ensured availability of appropriate food and reminded them to take their medication. People with hypertension function within their own family realities which may be supportive, but may also add additional constraints on their ability to be able to care for themselves. The cross-sectional descriptive study by Dennison, Peer, Steyn, Levitt et.al. (2007) in public and private PHC centers found that more than half of the respondents claimed that due to deaths in their families, and the added burdens

attributed to looking after orphaned grandchildren, they were not able to care for their own illnesses and this contributed to non-adherence.

Another factor in family support is the understanding and belief system of hypertension in the community. The study undertaken in the Democratic Republic of Congo by Fina Lubaki et. al. (2009) which showed that hypertensive patients were not supported by their family members or their surrounding community as it was believed that the hypertensive patients were the cause of their own illness. The belief was that hypertensive patients are witches, and that this was the punishment for their evil practice was an additional factor. This belief and attitude towards the disease had a strong influence on non-adherence to medication. Fina Lubaki et. al. (2009) argues that health-care providers should provide education, regarding the bio-psychosocial condition, to patients.

Social circumstances were discussed by respondents and within the literature. A population-based survey on compliance to antihypertensive medication in the Seychelles reported poor adherence among patients living alone, living in big cities, and those who were heavy drinkers (Bovet, Burnier, Madeleine et al., 2002). The report of the WHO (2006) concurs noting that the lack of a parent or partner may negatively affect a patient to take the medication or to go for follow-up appointments.

This finding is supported in Leys' cognitive model of compliance which shows that mental instability negatively influences the recall of information provided by the health-care providers (Ogden, 2004).

It was evident from this study that alcohol use is a contributing factor to non-adherence to medication. Hypertensive patients who use alcohol tend to forget to take their medication regularly and fail to adhere to their follow-up appointments. There was also a fear of mixing their medication with alcohol. This can lead to treatment interruption resulting in uncontrolled BP and a risk of stroke, renal failure and other conditions.

### ***5.6 Conclusion***

This chapter discussed the findings of the study and the relevant literature was presented to control the researcher's findings. The five main themes identified in the study which contributed to non-adherence of anti-hypertensive medication were supported by the literature.

Chetley et al. (2007) stated that to improve knowledge it is essential for behavior to change which means several important aspects which health workers overlook when giving health education. For patients to understand why they need to change it is essential that the reasons make sense from their point of view. Moreover, the reasons need to be connected to their belief systems and channeled through credible people.

## **CHAPTER 6: CONCLUSION, RECOMMENDATIONS AND LIMITATIONS**

### ***6. Introduction***

This chapter focuses on the conclusion, recommendations, and limitations of the study by recommending further research. The purpose of the study was to explore the perceptions and reasons why non-adherent hypertensive patients do not adhere to antihypertensive medication in Katutura Township in the Windhoek District. The conclusion and recommendations are based on the study's findings.

### ***6.1 Conclusion***

The study provides useful baseline data on non-adherence and should enlighten the Ministry of Health and Social Services policy makers and national level program coordinators on non-communicable disease. Since this study was only conducted in the Katutura Township, a further qualitative and quantitative study may be required to explore and quantify non-adherent patients' perceptions of the reasons why they are not adhering to antihypertensive medication.

Five main themes were identified as factors influencing non-adherence to medication in the study namely; lack of knowledge about the antihypertensive condition, reasons why patients were not taking medication, tradition and religious beliefs, the quality of the health care system and the broad social determinants. These were all supported by the literature that was reviewed. It is therefore apparent that the approach to providing antihypertensive medication should be improved. Efforts should go beyond provision of free services to include the issues of accessibility and continuing education and good quality health care services. Such a

comprehensive approach would influence adherence to medication. On the basis of these the following are recommended.

## ***6.2 Recommendations***

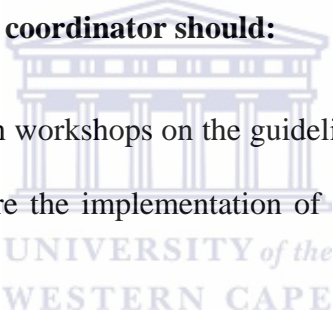
In accordance with the findings of this study, the following recommendations should be considered to improve adherence among hypertension patients at the KHC.

### **6.2.1 Intervention recommendations**

These are recommended at national, regional, and district levels, respectively.

#### ***National level***

##### **The Non- Communicable Disease coordinator should:**

- 
- Conduct national orientation workshops on the guidelines to all PHC supervisors, clinical nurses and doctors to ensure the implementation of the Guidelines for Management of Hypertension.
  - Orient the health care providers on the Guidelines for Management of Hypertension. This will motivate them to provide health education on causes of hypertension, hypertension as a disease and the benefit of medication.
  - Develop monitoring and evaluation of the program focusing on the management of hypertension at the KHC as a pilot study. This will allow the coordinator to identify gaps and to act on them.
  - Facilitate a process whereby all health care providers provide health education or individual counseling to patients at the health center to allow patients and families to

understand and conceptualize hypertension and the importance of life style change. By acquiring this knowledge and skill, they will be motivated to change their lives in order to control their hypertension.

- Develop information, education, and communication (IEC) materials for the promotion of healthy lifestyles to minimize hypertension in the district. Emphasis should be put on causes of hypertension, risk factors, prevention, treatment and side-effects.
- Arrange annual health education campaign concerning hypertension disease through different media like radio, television, posters and pamphlets.

**The National Pharmaceutical coordinator should:**

- Regularly update the hypertension guidelines as new and less toxic antihypertensive medication becomes available. This will ensure patients receive appropriate and more effective medication.
- Develop and implement the pharmaceutical care protocol for antihypertensive medication counseling. This will motivate patient to adhere to medication.

***Regional level***

The following should be considered:

**The Regional management team (RMT) should:**

- Appoint a local person to coordinate non-communicable diseases programs in the region.

- Strengthen coordination and collaboration with traditional and spiritual healers to improve adherence in the township.
- Integrate hypertension services in the PHC outreach clinics to ensure accessibility of services to patients.

### ***District Level***

#### **Primary Health Care Supervisors should:**

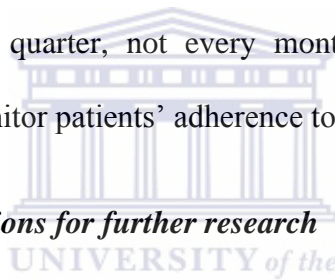
- Establish community based hypertension support groups to facilitate adherence to medication as they learn more about and gain acceptance of their health conditions and thereby find solutions to their challenges.
- Implement the recommendations of the guidelines for the management of hypertension by establishing clinics and scheduling fixed days for follow-ups as stipulated in the MOHSS guideline for hypertension, to reduce waiting times and to improve knowledge of health workers regarding hypertension. This should result in the smooth running of health facilities.
- Promote healthy lifestyles in the district.
- Ensure that hypertension clinics are conducted as stipulated in the guidelines on the management of hypertension. These will reduce the long waiting hours at the health s.



**Health-care providers (nurses, pharmacists and doctors) should:**

- Stress to patients that antihypertensive medication is for life, dosage should not be skipped and discontinued, and discourage them from using local herbs to treat their condition.
- Involve hypertension patients and their families in the review of their medication, to understand the importance of the renewal dates as markers of adherence.
- Reduce patients' travel costs to the health center to collect their medication on a monthly basis by giving them three months supplies. This will imply that patients will come for follow-up visits once per quarter, not every month. Community nurses to conduct monthly home visits to monitor patients' adherence to medication.

***6.3 Limitations and recommendations for further research***



This study was not all embracing thus its limitations mentioned in chapter 3 (3.7) could be addressed in further research being conducted. The researcher therefore recommends that:

- A similar study should be conducted in other districts including private sectors prior to improve the generalization of these results.
- A study on the use of traditional treatment and religious beliefs in combination with hypertensive medication should be undertaken.
- A study on knowledge, attitudes, and perceptions of health-care providers on the management of hypertension should be done.

#### ***6.4 Summary***

The results of the study reflect the importance of reinforcement of adherence to medication. Therefore, it is the view of the researcher that the findings should serve to guide, and assist policy makers, non-communicable coordinators, as well as the PHC supervisors to support the hypertension program and to put more effort into addressing detected problems. Improvement in knowledge among patients diagnosed with hypertension will help them increase adherence to antihypertensive medication in the Windhoek District.



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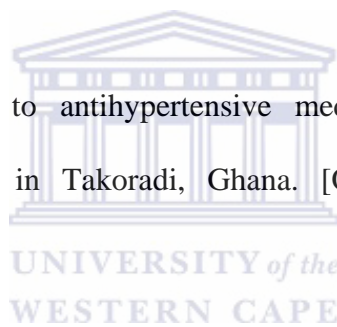
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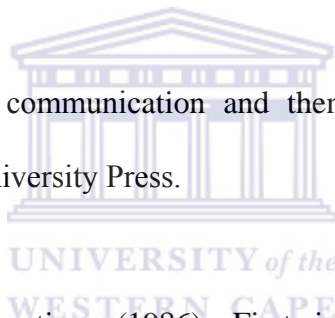
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**APPENDIX 1: Individual Interview Guide**

Individual Interview guide for non-adherent hypertension patient ( in-depth interview):

Name of the health facility: .....

Number of respondent: .....

Date of birth: .....

Marital status: .....

Qualification: .....

Employment History: .....



Name of the researcher: .....

Names of the research assistants.....

Date.....

Time started: .....

Time ended: .....

- ***Please tell us what you know and believe about hypertension/high blood pressure conditions.***

Prompt:

Do you know what hypertension is? If yes explain

What can you do to prevent or control hypertension?

Are you on medication? If so, what do you have to take and how often do you take it?

Tell us more about your feelings about hypertension medication. Do you mind taking it? If so, why?

Do you ever not taking your medication? If so, why not? What would make you take it?

Do you know what happen if you do not take your medication? Please describe.

Could you please give us reasons for why you have problems with taking your medication as prescribed by your doctor?

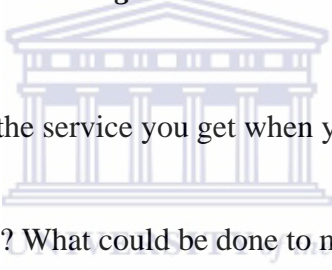
What do you do when you miss taking your medication?

Explain the benefits of taking the medication as prescribed by your doctor?

What are the barriers/factors that influence you not to take your medication?

- ***Tell us about your experience visiting the Health***

Prompt:

- 
- Are you happy with the service you get when you come to the ? What do you like about it?
  - If there are problems? What could be done to make things better?
  - When you come for follow-up, how long do you wait to be assisted by health worker? Is that a problem for you? If so, what could they do to make it better?
  - What changes or improvement would you like to see at the health or clinic?  
Explain the challenges that you face when coming to the clinic/health .

- ***How easy do you find it to get to the health for your appointment?***

Prompt:

- What are the difficulties you encounter in getting to the health ? If any explain.
- What kind of transport do you use to go to the health ? What that the cost? Is that a problem for you?
- Tell me who assists you get there?
- Does your work affect your adherence to treatment? Please explain.

- Did you experience problem of getting a day off or few hours to go for follow up?  
If so, does it affect your salary?
- Explain how this affects your wages?
- How is being on treatment affected your daily life? Explain
- Do you have treatment supporter? If so please explain
- Do you take alcohol? If so, please explain how it affects your adherence to medication
- Are there any other factors that influence your adherence?
- Do you like to leave beer or wine on weekend or at weddings or other social events

Thank you



**APPENDIX 2: Ethical Clearance**

**OFFICE OF THE DEAN  
DEPARTMENT OF RESEARCH  
DEVELOPMENT**

Private Bag X17, Bellville 7535  
South Africa  
Telegraph: UNIBELL  
Telephone: +27 21 959-2948/2949  
Fax: +27 21 959-3170  
Website: www.uwc.ac.za

17 December 2010

**To Whom It May Concern**

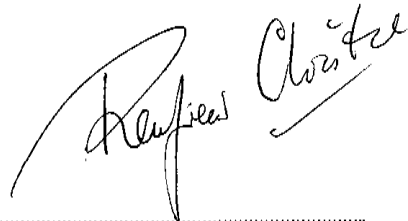
I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and the ethics of the following research project by: Mrs. MI Mushimba (School of Public Health)

Research Project:

Patient's perceptions about factors that influence non-adherence to antihypertensive medication in a Township in Windhoek District, Namibia

Registration no:

10/8/22



PROFESSOR RENFREW CHRISTIE  
DEAN OF RESEARCH  
UNIVERSITY OF THE WESTERN CAPE



**UNIVERSITY of the  
WESTERN CAPE**

A place of quality, a place to grow, from hope to action through knowledge

**APPENDIX 3: Authorization for the Ministry of Health and Social Services**

9 - 0/0001



**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: <a href="mailto:hilmanangombe@yahoo.com">hilmanangombe@yahoo.com</a>
Enquiries: Ms. H. Nangombe	Ref.: 17/3/3/AP	Date: 20 December 2010

**OFFICE OF THE PERMANENT SECRETARY**

Mrs. M. I. Mushimba  
CHP  
Disability Prevention & Rehabilitation Services

Dear Mrs Mushimba,

**RE: Patients' perception about factors that influence non-adherence to Antihypertensive medication in Windhoek District, Namibia.**

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"*

## APPENDIX 4: Respondent Information Sheet



UNIVERSITY OF WESTERN THE CAPE  
*School of Public Health*

Private Bag X17 • **BELLVILLE** • **7535** • South



### Respondent Information Sheet

#### Dear Respondent:

I am Milka Ipula Mushimba, a student at the School of Public Health (SOPH), University of Western Cape (UWC). I would like to request your participation in research I am conducting. The research is for a Mini-Thesis, which is part of the requirement for a Masters degree in Public Health (MPH).

#### Title of research

Patient perception about factors that influence non-adherence to antihypertensive medication in Katutura Township in Windhoek District, Namibia.

#### Purpose of the study

The purpose of the study is to gain an understanding of the perception of non-adherence hypertensive patients in the Katutura Township about the factors that influence their non-adherence. The researcher anticipates that the findings from this study will influence policy-



makers in the development of hypertension policy, which will in turn improve the interventions and reduce morbidity and mortality in the district.

### **Who is the researcher?**

The study will be conducted by Ms. Milka Ipula Mushimba as partial fulfillment of a Masters Degree in Public Health, at the University of Western Cape, South Africa.

### **Description of the research**

The research seeks to find out about the factors that contribute to non-adherence to antihypertensive medication among non-adherent hypertensive patients in Katutura Township in Windhoek district. The research has been approved by the University of Western Cape and the Ministry of Health and Social Services, Namibia. The study will include face-to-face interviews with non-adherent hypertensive patients who are residents of Katutura Township and who receive their treatment at Katutura Health . Respondents will be asked about their experience and perception of being on antihypertensive medication and the challenges that contribute to non-adherence to medication.

All the information will only be used for this research. The interview will take about 45-1 hour to complete if you agree to be interviewed.

### **Respondent**

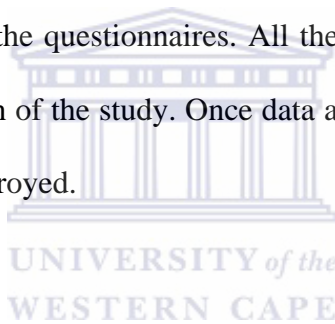
Your participation in the study is voluntary, and you participate of your own free will. You are also free to withdraw from the research at any time should you wish to do so. If there is any

detail or question that is not clear, please ask so that I can clarify it further. If there is a question you do not feel comfortable answering, you do not have to answer it.

There is no expected benefit or harm to you from the study. It is hoped that the research will impact positively on the services you and others receive from this health . All respondents will be provided taxi fees at the end of the interview as a token of appreciation.

### **What will be done to ensure confidentiality?**

Your identity will be kept anonymous. Your name will not appear on the questionnaire and the information you provide will not be linked back to you in any way. The consent form that you sign will be kept separately from the questionnaires. All the documents pertaining to the study will be kept safely until completion of the study. Once data analysis is done and the study report written, the documents will be destroyed.



### **Benefit and cost of the study**

There will be no direct benefit to you from this study. However, the result of the study will be used in making recommendation and inform the revision of the hypertension program in Windhoek district. There is no cost for the respondents to participate in this study other than the time that will be spent on interviewing you.

### **Informed consent**

If you decide to take part in the research, I will ask you to sign the attached consent form as proof that you have agreed to participate.

## Contact details

Thank you for agreeing to take part in the research. I am accountable to Dr. R. Stern, my supervisor for the Mini-Thesis.

Should you have any further queries, feel free to contact me or my supervisor.

The contact details:

Milka Mushimba

E-mail: [mimushimba@hotmail.com](mailto:mimushimba@hotmail.com)

Student number: 2826875

Tel: 264812560805

### Or my Supervisor:

Dr. R. Stern

E-mail: [rstern@uwc.ac.za](mailto:rstern@uwc.ac.za)

School of Public Health

University of Western Cape



## APPENDIX 5: Interviewer Agreement Sheet



UNIVERSITY OF WESTERN THE CAPE  
*School of Public Health*

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



Researcher: Milka Ipula Mushimba UWC Student

Number: 2826875

Tel: +264812560805

E-mail: [mimushimba@hotmail.com](mailto:mimushimba@hotmail.com)

Place: Windhoek

### Interviewer Agreement



I agree to conduct research on the respondent whose signature appears below. I undertake to keep the respondent's identify and the contents of the research interview confidential. I will use the information gathered for the purpose of a mini-thesis. Any change from this agreement will be renegotiated with the respondent.

### Interviewee Agreement

I have read the respondent information sheet/the contents of the respondent information sheet have been explained to me.

I fully understand that I am taking part in research and I am participating voluntarily. The Mini-  
Thesis will collect information from non-adherent hypertensive patients at Katutura Health . I  
have been assured that this information will be confidential.

I hereby give consent to participate in the research.

**Signed by Interviewee:**

**Signed by Interviewer:**



**Date:**