

**ADHERENCE TO SELF-CARE PRACTICES AND
ASSOCIATED FACTORS AMONG PATIENTS
DIAGNOSED WITH HYPERTENSION ATTENDING
THE MEDICAL OUTPATIENT CLINIC AT KENYATTA
NATIONAL HOSPITAL**

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**Adherence to Self-Care Practices and Associated Factors among
Patients Diagnosed with Hypertension Attending the Medical
Outpatient Clinic at Kenyatta National Hospital**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for
the Degree of Master of Science in Nursing (Medical Surgical
Nursing) of the Jomo Kenyatta University of Agriculture and
Technology**

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

Signature.....Date.....

Anne Adhiambo Opiyo

This thesis has been submitted for examination with our approval as the University Supervisors

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DEDICATION

This research is dedicated to my loving father Mr. Samuel Opiyo for his unwavering support, my dear husband Mr. Wanga, my wonderful children Lavin, Mark, Sammy and Joy for their patience and understanding during my academic journey, my brother Nahshon and Wilfred for encouraging me to keep going.

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ABBREVIATIONS AND ACRONYMS

AHA	American Heart Association
B/P	Blood Pressure
BMI	Body Mass Index
CHF	Congestive Heart Failure
DASH	Dietary Approaches to Stop Hypertension
DBP	Diastolic Blood Pressure
H/SCALE	Hypertension Self Care Activity Level Effect
HELM-Scale	Hypertension Evaluation of Lifestyle and Management
HTN	Hypertension
KNH	Kenyatta National Hospital
LMIC	Low and Middle Income Countries
MOPC	Medical Outpatient Clinic
NCD	Non Communicable Diseases
SBP	Systolic Blood Pressure
SCA	Self –Care Activities
SSA	Sub – Sahara Africa
WHO	World Health Organization
CVD	Cardiovascular Diseases

TB

Tuberculosis

HBM

Health Belief Model

DEFINITION OF OPERATIONAL TERMS

Adherence Is a commitment in following a given instructions or activity for a particular reason. The study sought to determine the level of adherence to self-care practices such as medication adherence, diet adherence, weight control, physical activity, smoking cessation and moderation of alcohol.

DASH Diet This is diet rich in vegetables, fruits and whole grains. It includes fat-free or low fat dairy products, fish, poultry, beans and nuts

Hypertension Denotes an increase in systemic blood pressure of a systolic blood pressure above 140mmhg or diastolic blood pressure above 90mmhg or both.

Hypertension Evaluation Lifestyle and Management (HELM Scale) This is a valid scale used to assess hypertension knowledge and self-management skills. In this study, scores above the mean value were considered good knowledge while scores below the mean value were considered as poor. Good Knowledge was scores of above mean value on HELM scale while Poor knowledge was scores of below mean value on HELM scale.

Hypertension Self-Care Activity Level Effect (H-SCALE) Is a self-reporting evaluation created to gauge the advised self-care practices in a way that will make it easier to examine the potential dose-response link between adhering to these habits and improved blood pressure management. In this study, a score above four out of six domains in H-scale was good self-care practice and a score of less than four domains out of six domains in H-scale was poor self-care practice.

Self-care Practices These are the things that people do to preserve their health, avoid illness, promote health, and deal with illness and disability, either with or without the help of a healthcare professional (WHO, 2018). In

this study self-care practices entail adherence to prescribed medication, weight control, diet control, engaging in physical exercises, moderation of alcohol and cessation of smoking. It was categorized into good self-care practice and poor self-care practice based on Hypertension Self – Care Activity Level Effect (H-SCALE).

ABSTRACT

Self-care practices are mainly the activities that a hypertensive patient undertakes with an intention of improving the quality of their well-being. Poor self-care practices can lead to uncontrollable hypertension which then leads to serious complications, disabilities and even death. The main objective was to examine the adherence of self-care practices and related factors among hypertensive patients attending medical outpatient clinic at Kenyatta National Hospital. This was a hospital based analytical cross-sectional study. The target population was 420 adults aged above 18 years and taking antihypertensive medications. Based on Fisher's et. al 1998 formula the sample size was 168 participants. Systematic random sampling technique was used and data collection was through interviewer-administered structured questionnaire. Self-care practice was assessed using a validated Hypertension Self- Care Activity Level Effects (H-SCALE) containing six sub scales of self –care undertakings which include adherence to medication, managing body mass index, exercising, regulating alcohol intake, cessation of smoking and reducing salt intake. Good self-care practice adherence towards hypertension was at 34.7% while 65.3% had poor adherence to self-care practices. The study had three objectives whereby 37.3% of the subjects had good level of knowledge on hypertension while 62.7% had poor level of knowledge on hypertension. Good self-care practice adherence towards hypertension was at 34.7% while 65.3% had poor adherence to self-care practice. Binary logistic regression analysis was done to test association between sociodemographic characteristics and self-care practices among hypertensive patients and good knowledge on hypertension was found to be significantly associated with self-care practices (Odds Ratio (OR)=3.20, 95% CI:1.64-6.24, P=0.001), indicating that knowledge is a key independent predictor in hypertension management. This study revealed that the level of knowledge on hypertension was poor at 62.7%, the level of good self-care practice among hypertensive patients was low at 34.7% The most adhered to practice was cessation of smoking at 92.7%, adherence to medication was 86.5%, adherence to alcohol moderation was 57.8%, adherence to weight management was 30.9% adherence to physical activity was 27.3% and the lowest adhered to was low salt diet at 15.1%. The findings further revealed that good knowledge of hypertension was statistically significantly associated with 3.2 times higher likelihood of good adherence to self-care practice, indicating that knowledge is a key pillar in the management of hypertension for a better control of blood pressure. In view of the findings, the public health facilities including KNH should strengthen their efforts in providing targeted structured education programs to the patients and their family on hypertension, management and complications. This will promote a better understanding and improve adherence hence better control of blood pressure. The study also recommends that regular check-up and follow-up of patients 'compliance with self-management protocol should be given to identify factors that potentially hinder the patients' adherence to hypertension self-care protocol.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

While hypertension affects approximately 24% of the Kenyan population, poor adherence to self-care practices driven by modifiable factors such as inadequate knowledge, low income, lifestyle habits, and health system limitations continues to undermine effective blood pressure control and management (Ademe, Aga & Gela, 2019). Self-care, defined by World Health Organisation as the ability of individuals and communities to promote health, prevent disease, and cope with illness with or without the support of a healthcare provider, plays a central role in managing hypertension and preventing its progression to severe complications. These practices include adherence to antihypertensive medication, dietary modifications, regular physical activity, and moderation of alcohol intake, smoking cessation, and weight control components (Asenahabi & Ikoha, 2023). These components are evaluated using validated tools such as the Hypertension Self-Care Activity Level Effects (H-SCALE) scale (Creswell, 2018).

A hypertension patient who engages in self-care practices does so with the goal of enhancing their level of health. Uncontrolled hypertension brought in by poor self-care habits can result in catastrophic problems, even death (Hussen et al., 2020). Self-care is a persons', family, or communities' ability to enhance well-being, avoid illness, maintain well-being, manage illness and disability either with the help of a health care professional or on their own (WHO, 2018; Allaya, 2021). Initiatives designed to prevent and control hypertension-related death, disability, and morbidity should therefore take into consideration risk factors and the extent of the patient's self-care practice (Hussen et al., 2020).

Hypertension is an increase in blood pressure that is higher than 140 mmHg (systolic), diastolic blood pressure greater than 90 mmHg, or both (WHO, 2019). Globally, it is the most prevalent cardiovascular disease in the world, affecting 1.13 billion people living in developing countries where resources are scarce and patients have little

understanding of their conditions. It continues to be the major cause of disease and demise globally. By 2025, it is anticipated that there will be 1.56 billion (29%) instances of hypertension worldwide (Gelaw et al., 2020). In sub-Saharan Africa, incidence of hypertension is between 30 and 31.1% overall in Africa (Mekonnen et al., 2019).

Despite the availability of antihypertensive medicine, which has led to low control rates, hypertension is prevalent in Kenya at 26.1% of the population (Ondimu et al., 2019). Although the actual etiology of hypertension is unknown, data suggests that the risk may be aggravated by various factors such as harmful alcohol consumption, physical inactivity, taking up more salt, smoking, and overweight (Adam et al., 2021). Therefore, avoiding these causes is the most crucial part of practicing self-care, which is thought to be a crucial activity for a person to improve health or prevent diseases.

Untreated cases of hypertension result in significant illness that raises chance of a hypertensive emergency leading to a heart attack, brain or kidney damage, or other cardiovascular illnesses (Gelaw et al., 2021). In addition to the 17 million deaths worldwide caused by cardiovascular illnesses each year, hypertension complications contribute to 9.4 million of those deaths (WHO, 2020; Ademe et al., 2019). Additionally, it raises the risk of kidney and eye illness.

Self-care activities are a non-pharmacological method that not just lowers blood pressure but also lowers likelihood of developing additional cardiovascular risk factors. It has been suggested as one of the most significant hypertension prevention strategies and is regarded as a fundamental hypertension treatment (Ademe et al., 2019). For hypertensive individuals on antihypertensive medication, it is also advised as adjuvant therapy to maximize the antihypertensive impact. Therefore, by enhancing the self-care practices of hypertensive patients and equipping them with more knowledge about hypertension, life-threatening consequences of hypertension can be avoided. Blood pressure control requires hypertension self-care practice, which is a dynamic and active process based on knowledge, attitude, discipline, determination, commitment, self-regulation, empowerment, and self-efficacy (Gelaw et al., 2021).

The most important self-care measures for hypertension are medication compliance, sustaining a healthy body weight (BMI of 18.5 to 24.9 kg/m²), engaging in half an hour or hourly exercises daily or at least four days in a week in addition to routine activities, consuming alcohol in moderation (men: 2 liters and women: 1 liter), quitting smoking, and following the DASH diet as well as a low-sodium diet (Gebremichael et al., 2018). The DASH diet places an emphasis on foods high in protein, fiber, potassium, magnesium, and calcium, like fruits, vegies, beans, nuts, whole grains, and low-fat diets (Dorans et al., 2017). Additionally, hypertension individuals need to regularly check their blood pressure.

Strategies for preventing and controlling hypertension require collaboration from patients, their families, and decision-makers in government and policy. Patients with hypertension should start using self-care techniques before starting their recommended drugs, and they must keep doing so afterward. Therefore, adhering to self-care practices helps people manage their blood pressure, avoid and lessen problems, which lead to morbidities, impairments, and even death (Hussen et al., 2020).

Patients do, however, encounter a number of difficulties with self-care. The factors related to this may arise from different personal and environmental contexts where self-care practices occur and thus influence the person's participation to accomplish the desired result. Personal perceptions about the efficacy of treatment, understanding about hypertension, self-efficacy, self-care abilities, social support, and patient-provider communication are a few of these determinant factors. Age, gender, marital status, religion, education, knowledge about hypertension, and self-efficacy are the primary personal characteristics. Most of the environmental influences center on social support (Gelaw et al., 2021).

1.2 Problem Statement

As predicted to affect a whopping 1.13 billion individuals worldwide, hypertension continues to be of great concern. Even worse is the prediction that by 2025, there will be 1.56 billion people on the planet (Gelaw et al., 2021). The situation is similar in Africa, where it is estimated that 30% of people have the illness (Mekonnen et al.,

2019). Closer home in Kenya, the situation is similar, with studies reporting a prevalence range of 18.4 to 32.6% (Van de Vijver et al., 2013; Joshi et al., 2014). There are about 16800 cases of hypertension patients visiting medical outpatient clinics at Kenyatta National Hospital, the biggest referral hospital in the nation (KNH yearly medical records, 2021).

According to surveillance data from Kenya (Phillips-Howard et al., 2014), fatalities from non-communicable diseases increased there from 35% in 2003 to 45% in 20 years. Hypertension was a prominent factor in these instances (Institute for Health Metrics and Evaluation and the International Centre for Humanitarian Affairs, 2016). A study conducted by the Ministry of Health (2015) on risk factors for non-communicable diseases showed that 24% of citizens experienced high blood pressure and only 8% adhered to medication. Only 15% of hypertensive patients were aware of their disease, according to the study, and only 4.6% had their hypertension under control. Findings showed that over 56% of Kenyans have never undergone a high blood pressure screening (MoH-Kenya, 2015).

At Kenyatta National Hospital, Achieng' et al. (2008) researched on management of blood pressure in hypertensive patients, the degree of following up with antihypertensive treatment, and related risk factors for non-adherence to therapy. The results revealed that 74% of patients had high blood pressure and 68% were non-adherent to hypertensive therapy. The most often mentioned causes of non-adherence were improper dosage among patients with poorly regulated blood pressure and lack of adhering to pharmacologic therapy. Failure to change lifestyle leads to lifestyle issues including obesity and insufficient understanding of their medical illnesses were also observed. The study came to the conclusion that a high number of patients had high blood pressure and were non-adherent mostly due to ignorance and subpar self-care habits.

Despite significant advancements in the management of hypertension, many patients continue to face subpar outcomes and life-threatening complications as a result of uncontrolled high blood pressure (Gelaw et al., 2020). A serious warning sign like hypertension necessitates major lifestyle adjustments. Prior research has demonstrated

that adhering to hypertension self-care recommendations, such as maintaining a healthy weight, not smoking, taking prescribed medications, controlling one's diet, engaging in physical activity, and consuming alcohol in moderation, can significantly lower blood pressure (Aparajita et al., 2018).

Even yet, individuals with chronic diseases should practice self-care to have a better life, lower the likelihood of disability, and cut back on the escalating cost of health care. The hypertensive individuals continue to have low levels of adherence. With this context in mind, current research seeks to ascertain the self-care practice adherence and associated characteristics amongst hypertension patients attending the medical outpatient clinic at Kenyatta National Hospital.

1.3 Justification of the Study

Self-care is seen as a very fundamental form of treatment for people with chronic illnesses in order to prevent potential disability, improve quality of life, and lower the steadily rising cost of healthcare. Primary care visits are cut by 17% while outpatient visits are cut by 17% and emergency room visits are cut by up to 50% (World hypertension report, 2020). The self-care techniques help individuals with a range of illnesses live longer and in better health by avoiding complications and lowering medical costs (Anwar et al., 2019).

This study aimed to ascertain the adherence to self-care practices and related factors amongst patients diagnosed with hypertension visiting the medical outpatient clinic at Kenyatta national hospital, due to low self-care practice adherence amongst hypertensive patients and the lack of data to explain this problem. As a national referral hospital, Kenyatta National Hospital sees a lot of patients in medical outpatient clinics who are referred for specialist care from various locations, including individuals with hypertension. The results of this study also helps policymakers to adjust hypertensive patients' self-care practices and create awareness-raising efforts that concentrate on both the patient and the patient's family. Additionally, it expands the body of nursing knowledge and serve as a foundation for additional study. The results of this study was

to add an impact on clinical practice since they can help focus attention on the treatment and prevention of patients with hypertension.

Results may also assist the policy makers to revise the self-care practice strategies for hypertensive patients and develop sensitization campaigns that focus on patient's family as well as the individual patient. It also scales up the nursing body of knowledge and provide basis for advanced research. The results of this study can have an impact on clinical practice since they can help focus attention on the treatment and prevention of patients with hypertension.

1.4 Research Questions

1. What is the level of knowledge on hypertension among patients diagnosed with hypertension attending medical outpatient clinic at KNH?
2. What is the level of adherence to self-care practice among patients diagnosed with hypertension attending medical outpatient clinic at KNH?
3. What socio-demographic characteristics are associated with adherence to self-care practice among hypertensive patients attending the medical outpatient clinic at KNH?

1.5 Objectives of the Study

1.5.1 Broad Objectives

The general objective of the study was to assess adherence to self-care practice and associated factors among hypertensive patients attending Medical Outpatient Clinic at Kenyatta National Hospital.

1.5.2 Specific Objectives

The study was guided by the following specific objectives:

1. To assess the level of knowledge on hypertension among patients diagnosed with hypertension attending medical outpatient clinic at KNH

2. To establish the level of adherence to self- care practices among hypertensive patients attending medical outpatient clinic at KNH
3. To determine social demographic characteristics associated with adherence to self-care practice among hypertensive patients attending medical outpatient clinic at KNH.

1.6 Hypothesis

1.6.1 Null Hypothesis

H₀: There is no significant association between individual factors and level of self-care practice among patients diagnosed with hypertension visiting KNH medical outpatient clinic

1.6.2 Alternative Hypothesis

H_a: There is significant association between individual factors and level of self-care practice among patients diagnosed with hypertension visiting KNH medical outpatient clinic.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents related literature on level of adherence to self – care practice and related causes amongst hypertensive patients. This chapter also presents theoretical framework as well as empirical review on the phenomenon under study paying attention to the relationships that exists as well that the research gap existing in the literature. This chapter covers socio-demographic characteristics associated with adherence to self-care practices, social support available to the patients and hypertension knowledge among hypertensive patients. Finally, the chapter ends with conceptual framework showing how the researcher intended to achieve the objectives.

2.2 Knowledge on Hypertension

Hypertension is among the key public issues affecting both high-income, poor and moderate income nations worldwide. However, in comparison with industrialized nations, low- and middle-income countries have a higher level of awareness of the disease, its prevention, and treatment. To avoid complications connected to hypertension and increase survival, ideal blood pressure control is essential. Hussien et al. (2020) assert that having sufficient understanding of hypertension enhances self-care practices (SCP).

According to a UK study, understanding hypertension was recognized as the most crucial factor in the practice of effective self-care, along with guidance and support from caregivers. In a research conducted in South India, 52.4% of patients with high blood pressure had average or good understanding of the condition. Conversely, 82% of Canadians with hypertension did not know what hypertension was. 43.6% of hypertensive patients in Addis Ababa, Ethiopia had good knowledge about hypertension (Chanyalew et al., 2019). According to a study conducted in Ethiopia, hypertensive patients who had high understanding of their condition were 4 times more

probable to perform self-care in comparison to less knowledgeable patients (Adam et al., 2021).

Lubaki et al. (2009) linked the problem of uncontrolled hypertension to the associated side effects that comes with medication, poverty, difficulty of getting medication, low education, lack of information and support and dilapidated infrastructure that hinder accessibility to quality healthcare particularly in the countryside. Such studies have been corroborated by other studies (Bourne, 2009; Bourne, 2010). It has been posited that self-management practices as well as knowledge about hypertension influence blood pressure control (Samal et al., 2007). Nonetheless, Bourne et al., (2010) research that focused on men aged more than 55 years revealed that people who are knowledgeable on health issues do not always live a healthy lifestyle. The study showed lack of self-care practices by patients.

Pengpid and Peltzer (2020) study on the commonness, knowledge, cure, and control of hypertension amongst adults in Kenya, 28.6% of the population had the condition, the condition was more prevalent in men at 29.2% and women had the lowest at 27.9%. The prevalence rate was low among those between the ages of 18 and 29 and high among those between the ages of 60 and 69, at 58.3%. Only 6.5% of people who were aware of antihypertensive medication were presently using it, and just 12.5% had controlled their blood pressure (140/90 mmHg). According to the study's findings, adult hypertension is highly prevalent in Kenya, although knowledge, treatment, and control rates are poor.

2.3 Adherence to Self-Care Practices

The ability of people, families, and communities to promote health, prevent diseases, maintain health, and manage illness and disability with or without the assistance of a healthcare provider is known as self-care practice (WHO, 2018). Hypertension self-care is crucial for effective blood pressure management and a reduction in the consequences of hypertension on kidney and cardiovascular disease. A good hypertension self-care routine can cut down on trips to the doctor's office and the emergency room by 17% and 50%, respectively (Gelaw et al. 2021). Self-care

practices (SCPs) are also suggested as a better remedy for hypertensive individuals using antihypertensive medications to maximize the antihypertensive result (Ondimu et al., 2019).

The most common non-communicable condition and the best indicator of cardiovascular disease is hypertension. (Gebremichael et al., 2019). Self-care behavior adaption has been shown to be extremely important for reducing and preventing problems connected to hypertension. Self-care activities for hypertension include taking medications as prescribed, maintaining a healthy body weight (BMI of 18.5-24.9), engaging in 30-60 minutes exercises four to seven days weekly, changing one's diet, drinking alcohol in moderation, and giving up smoking (Gebremichael et al., 2019).

The main objective of self-care recommendations is to support the patient in BP management through sustainable non-pharmacologic treatment since, according to Ajani et al. (2021), the current pharmacologic therapies are effective but insufficient to regulate blood pressure. In a study done in Ghana 72% of hypertensive patients being studied had poor hypertensive SCP while a study in South India revealed that 60.6% had poor hypertensive SCP (Gebremichael et al., 2019). Only 29.9% of hypertensive patients in Harar, according to a research, exercised as the hypertension management procedure advised. This was higher than studies carried out in various regions of Ethiopia, where the percentages were 24% in Debre Berhan and 20% in Mikelle (Adam et al., 2021).

2.3.1 Medication Adherence

Medication adherence, according to WHO (2019), is the degree to which a person takes their medications in a way that is consistent with the advice of a healthcare professional. High-adherence hypertensive individuals have improved blood pressure control. Liu et al. (2017) approximated that 50-80% of hypertensive patients fail to adhere to medications as directed, which prevents the medicine from having a therapeutic impact. Adherence is primarily an individual's conduct, and people who are intrinsically driven to follow one part of their recommended therapy give a strong

indication of their freedom of choice when it comes to choosing how well they are doing.

According to a Saudi Arabian study, 42.2% of individuals with hypertension took their prescribed antihypertensive drugs every day. Patients with hypertension who did not have any other concomitant conditions adhered to their antihypertensive drugs at a rate of 41% as opposed to 39% for those who did (Algabbani, & Algabbani, 2020). Resnick (2020) asserts that hypertension patients who take their meds have better results and experience a higher quality of life. Additionally, healthcare facilities can observe a decline in the re-admission of hypertension patients.

In another study conducted on the young street boys in Pakistan showed that hypertensive patients tend to seek medication when it becomes severe or it interfaces with job (Ali et al., 2005). These are not isolated cases as they are replicated even in Kenya (Taff & Chepngeno, 2005). There is high unwillingness to utilize health care services by hypertensive patients (Bourne et al., 2010) and many of them to do not adhere to self-care practices.

Gatimu et al. (2018) noted that medication adherence is a significant problem that is closely related to the treatment of chronic disorders like hypertension. Patients who were taking fewer than four medications showed greater antihypertensive medication adherence (47.1%) than those who were using more than four medications (Asgedom et al., 2018). Medication effectiveness and the effectiveness of the healthcare system can both be impacted by noncompliance with prescribed medication schedules.

Medication adherence remains a cornerstone in the effective management of hypertension, directly influencing blood pressure control and the prevention of cardiovascular complications. Studies have consistently demonstrated that poor adherence to antihypertensive therapy significantly increases the risk of uncontrolled blood pressure, treatment failure, and adverse cardiovascular outcomes (Burnier & Egan, 2019). In a multi-country study, Chow et al. (2022) found that patients with high medication adherence had a 2.5-fold higher likelihood of achieving target blood pressure compared to those with low adherence, irrespective of the number of

prescribed drugs. Factors positively associated with adherence include patient education on hypertension, simplified dosing regimens, and strong patient–provider communication (Abegaz et al., 2023). These findings highlight the need for targeted interventions to improve adherence as part of comprehensive hypertension management.

Despite having been prescribed medication in 74.8% of cases, a research in Iran found that only a small percentage of patients (36.1%) really followed their prescription regimens (Motlagh et al., 2016). Daniel et al., (2020) revealed that 65% of hypertension patients in Ethiopia had good drug adherence. When compared to individuals who had good adherence, hypertension patients with poor antihypertensive drug adherence had a higher chance of negative outcomes, such as hospitalization, and spend more healthcare expenses as a result of difficulties.

Numerous socio-demographic characteristics, such as age, gender, comorbidities, knowledgeable patients on the disease, the quantity of prescriptions, etc., have an impact on medication adherence. A study done in Turkey and Algeria revealed a link between understanding hypertension-related consequences and having good antihypertensive medication adherence. An Iranian study revealed that elderly patients had higher antihypertensive drug adherence rates and more knowledgeable of their condition than youthful patients (Javadzade et al., 2018). Patients with hypertension in Iran who were female were more likely to take their medication as directed. A Saudi Arabian study found that male hypertension patients adhered to their treatment plans more frequently compared to female hypertension patients, to their medications (Javadzade et al., 2018).

Despite its importance, non-adherence to antihypertensive medication remains prevalent, with rates ranging from 30% to 50% globally (Vrijens et al., 2021). Common barriers include medication side effects, complex dosing schedules, forgetfulness, lack of perceived need for treatment in asymptomatic stages, and financial constraints (Albasri et al., 2024). Interventions such as fixed-dose combination therapy, mobile health reminders, pharmacist-led counseling, and follow-up monitoring have shown measurable improvements in adherence rates and

subsequent blood pressure control (Kario et al., 2022). Evidence further suggests that integrating adherence support into routine clinical care through tailored patient education, adherence assessment tools, and motivational interviewing significantly improves long-term treatment compliance and reduces hypertension-related morbidity and mortality.

Therefore, patient awareness of medication advantages, availability to medications, and trust in their provider and healthcare system can all help hypertensive patients stick to their drug regimens better. To promote medicine adherence and population health, providers must develop their awareness of and comprehension of patients' attitudes, values, and anxieties as well as their own biases (Nahimana et al., 2018).

Ramadhan, Kusmiran, and Istianah (2025) examined the relationship between self-care, medication adherence, and blood pressure control among hypertensive patients in outpatient wards of a Type A Hospital in Bandung, Indonesia. Using a cross-sectional design with accidental sampling, the study involved 138 respondents between February and March 2025, utilizing the High Blood Pressure-Self-care Profile (HBP-SCP) and the Modified-Morisky Adherence Scale-8 (MMAS-8) as data collection instruments. Findings indicated that 82.0% of respondents exhibited low self-care, 86.0% were non-adherent to medication regimens, and 66.0% had uncontrolled blood pressure. Chi-square analysis revealed statistically significant associations between self-care and blood pressure control ($p < .001$) as well as between medication adherence and blood pressure control ($p < .001$). The study emphasized the need for periodic evaluation of self-care and adherence levels, advocating for sustained support from healthcare providers through continuous health education and the integration of suitable technologies to monitor and enhance self-care capabilities, thereby reducing the risk of hypertension-related complications.

Hernandez et al. (2018) assert that patient education can significantly increase medication adherence and decrease co-payments. These strategies include frequent and individualized counseling sessions with health care professionals, managing medical condition using various medication to reduce the amount of pills a patient

takes every day, reminding patients on when to take medicines through phone calls, among other methods that may be deemed effective.

Hailu et al. (2025) investigated self-care practices and associated factors among hypertensive patients attending follow-ups in public hospitals in Bahir Dar City, Northwest Ethiopia, through an institution-based descriptive cross-sectional study complemented by qualitative inquiry. The study, conducted between March and April 2021 with 415 participants, established that only 44.8% of respondents demonstrated good self-care practices, which encompassed adherence to medication, dietary adjustments, alcohol moderation, physical activity, and smoking cessation. Multivariable logistic regression analysis revealed that older age (≥ 60 years), higher education (secondary school or above), government employment, controlled blood pressure, good knowledge of hypertension, strong social support, and positive perceived health status were significantly associated with better self-care practices, with Adjusted Odds Ratios ranging from 1.53 to 7.82. Qualitative findings highlighted key barriers such as emotional instability, stress, financial constraints, lack of commitment, poor attention to health needs, and inadequate counseling from health professionals. The authors concluded that targeted interventions addressing knowledge, social support, and healthcare provider engagement were essential to improving hypertension self-care adherence in similar settings.

2.3.2 Physical Exercise

Patients with hypertension are urged to walk or do other aerobic activity on a regular basis. Every day for 30 to 45 minutes, jog or swim. Exercising regularly reduces SBP and DBP in normotensives by 3 to 5mmHG and 2 to 3mmHG, respectively. When treating resistant hypertension, regular physical exercise is related to reduce risks of mortality and cardiovascular events. Patients with resistant hypertension who engage in light to moderate-intensity aerobic workouts see momentary drops in ambulatory blood pressure (Sheilla & Scott., 2015).

The WHO recommends engaging in physical activity for 30 minutes every day in a week to avoid and regulate blood pressure. In addition to medical care, exercise is a

critical adjunct in the treatment of cardiovascular disorders (Foti et al., 2019). Cornelissen and Fagard (2005) found that aerobic exercise can lower SBP and DBP by roughly 7 mmHg and 5 mmHg, respectively. According to Weis et al. (2017), consistent aerobic exercise can stop age-related vascular endothelial dysfunction. The sympathetic nervous system, which is linked to essential hypertension, can be lowered by appropriate, intense aerobic exercise by reducing mental stress (Wen et al., 2017).

Exercise has been suggested to prevent, treat, and avoid hypertension (AHA, 2019). Regular exercise makes the heart stronger so it can pump blood more efficiently. As a result, the pressure on the arteries is reduced, decreasing blood pressure. According to numerous studies, hypertension is linked to low levels of physical exercise. Just 25% of the hypertension patients in an Iranian study participated in physical exercises for utmost 30 minutes daily (Motlagh et al., 2016).

According to a study conducted in Pakistan, being older, having a spouse, and living in a nuclear family predicted likelihood of physical exercise compliance. According to a study conducted in Ethiopia, 43% of hypertension patients adhered well to the exercise regimen. Patients also lack enthusiasm for organized physical activity as a result of inadequate access to gyms, parks, and walking trails. Another study discovered that exercising was among the hardest self-care practices to maintain because people believe it only involves strenuous exercise, which makes hypertension patients avoid it (Ajani et al., 2021). According to a Kenyan study, 67% of hypertension patients followed the advice to exercise (Tadesse et al., 2020).

Abza et al. (2024) assessed self-care adherence and its associated factors among hypertensive patients in public hospitals within the Guraghe Zone, Ethiopia. The multi-center institution-based cross-sectional study, conducted from May 20 to June 20, 2023, involved 370 systematically selected participants, with self-care status measured using the Hypertension Self-Care Activity Level Effects scale (H-SCALE). Analysis using binary logistic regression revealed that 50.8% of respondents demonstrated good self-care adherence. Significant predictors of good self-care included having a normal BMI (AOR = 2.049, 95% CI: 1.041–4.033), initiation of antihypertensive therapy within the past five years (AOR = 2.530, 95% CI: 1.462–

4.381), use of three or more antihypertensive medications (AOR = 4.534, 95% CI: 2.005–10.252), absence of comorbidities (AOR = 1.758, 95% CI: 1.030–3.003), and strong social support (AOR = 3.842, 95% CI: 1.994–7.402). The authors underscored the importance of tailored interventions focusing on weight management, early treatment initiation, effective medication regimens and strengthening social support systems to enhance self-care adherence among hypertensive patients.

Samuel Sogo et al. (2024) investigated perceived barriers to physical activity among overweight and obese adults attending the General Out-Patient Clinic at Lagos University Teaching Hospital. Employing a cross-sectional descriptive design, the study involved 285 systematically selected participants aged between 18 and 64 years, with data collected using the barrier section of the Exercise Benefit and Barrier Scale (EBBS) through questionnaires and interviews. Findings indicated that 78.6% of respondents reported moderate to high barriers to engaging in physical activity, with physical exertion emerging as the most frequently cited obstacle. Although factors such as age, family type, educational attainment, occupation type, median earnings, comorbidity, smoking, and alcohol consumption were significantly associated with perceived barrier levels, none were identified as independent predictors of high perceived barriers. The authors recommended targeted evaluation to identify individuals facing substantial challenges to physical activity, emphasizing the need to address physical exertion during lifestyle counseling for overweight and obese adults.

2.3.3 Weight Control

Current dietary recommendations place a strong emphasis on the significance of maintaining a suitable body mass index. Keeping a fit body mass is a crucial aspect of self-care. This is accomplished by ingesting the suggested serving sizes of foods to satisfy the projected calorie requirement. Individual caloric needs depend on activity level; therefore, self-care techniques for boosting exercise often have equal weight (Ademe et al., 2019). Setting an initial weight loss goal of 5 to 10 percent can significantly reduce the risk of hypertension and other CVDs. SBP would be reduced by 3-7 mmhg and DBP by 3-9 mmhg by losing weight to maintain a suitable body mass index of 18.5-24.9 kg/m² (Ademe et al., 2019).

Weight control is a key lifestyle modification for preventing and managing hypertension, given the strong link between excess body weight and elevated blood pressure. Epidemiological studies have shown that overweight and obesity significantly increase the risk of developing hypertension due to mechanisms such as increased sympathetic nervous system activity, insulin resistance, and altered renal sodium handling (Hall et al., 2021). Meta-analyses indicate that intentional weight loss of 5–10% of baseline body weight can reduce systolic blood pressure by approximately 5–20 mmHg, depending on the degree of weight reduction (Neter et al., 2022). Furthermore, the American Heart Association and European Society of Hypertension recommend weight control as a first-line non-pharmacological strategy for both pre-hypertension and established hypertension (Whelton et al., 2023), underscoring its relevance in clinical guidelines.

Mangiorou, Liamis, Apostolou, Milionis, and Barkas (2025) assessed eligibility rates for weight-lowering pharmacotherapy and bariatric surgery among individuals attending the Outpatients Lipid and Obesity Clinic at the General Hospital of Ioannina, Greece. Using a cross-sectional design, the study evaluated 1,072 participants against European Association for the Study of Obesity (EASO) guidelines and simulated various weight reduction scenarios to determine their impact on treatment candidacy. Results showed that 48.1% of participants were eligible for pharmacotherapy—26.4% with a BMI >30 kg/m² and 21.7% with a BMI >27 kg/m² plus at least one comorbidity—while 5.7% met the criteria for bariatric surgery, including individuals with BMI >40 kg/m², BMI >35 kg/m² with comorbidities, or BMI 30–35 kg/m² with diabetes. Common comorbidities included hypertension (59.2%), dyslipidemia (84.0%), diabetes mellitus (10.9%), and ASCVD (15.0%). Simulated weight reductions of 5%, 10%, and 20% progressively decreased pharmacotherapy eligibility to 35.6%, 23.9%, and 7.8%, respectively, and bariatric surgery eligibility to 3.6%, 2.1%, and 1.6%, respectively. The study concluded that a considerable proportion of patients qualified for advanced obesity interventions, emphasizing the importance of individualized management strategies and the potential impact of modest weight loss on reducing eligibility for more invasive treatments.

Various interventions, including dietary modification, increased physical activity, and behavioral counseling, have demonstrated efficacy in promoting weight loss and improving blood pressure control in hypertensive populations. The PREMIER trial showed that participants who combined the DASH diet with caloric restriction and physical activity achieved significant reductions in both weight and blood pressure compared to those receiving only standard advice (Appel et al., 2021). More recent studies have highlighted the benefits of tailored interventions, such as culturally adapted diets and technology-assisted weight loss programs, which have yielded greater adherence and sustained weight reduction among hypertensive patients (Johnson et al., 2024). These findings suggest that integrating individualized weight control strategies into routine care can amplify antihypertensive effects and reduce reliance on pharmacotherapy.

Befort et al. (2021) conducted a cluster randomized clinical trial to compare the Medicare Intensive Behavioral Therapy for Obesity fee-for-service model with two alternative delivery methods in-clinic group visits and telephone-based group visits among adults with obesity in rural Midwestern US primary care settings. The study enrolled 1,407 participants aged 20–75 years with a BMI of 30–45 kg/m², recruited between February 2016 and October 2017, with follow-up completed in December 2019. All participants received a lifestyle intervention addressing diet, physical activity, and behavioral strategies, delivered either through in-clinic individual visits (n=473), in-clinic group visits (n=468), or telephone group visits (n=466). At 24 months, mean weight loss was –4.4 kg (95% CI: –5.5 to –3.4) for the in-clinic group, –3.9 kg (95% CI: –5.0 to –2.9) for the telephone group, and –2.6 kg (95% CI: –3.6 to –1.5) for the in-clinic individual group. Compared with in-clinic individual visits, the in-clinic group intervention achieved significantly greater weight loss (mean difference: –1.9 kg; 97.5% CI: –3.5 to –0.2; p=0.01), while the telephone group intervention showed a non-significant trend toward greater loss (mean difference: –1.4 kg; 97.5% CI: –3.0 to 0.3; p=0.06). The authors concluded that group-based delivery, particularly in-person, was more effective than individual visits in promoting long-term weight loss in rural clinical practice.

Despite the proven benefits, maintaining long-term weight loss remains challenging for many hypertensive patients. Weight regain following initial loss can attenuate blood pressure improvements, a phenomenon observed in longitudinal studies where partial or complete weight regain reversed initial cardiovascular benefits (Santos et al., 2023). Barriers to sustained weight control include lack of ongoing support, environmental factors, and coexisting health conditions that limit physical activity. Evidence supports the incorporation of long-term behavioral support, self-monitoring tools, and periodic clinical follow-up to prevent relapse (Wing & Phelan, 2022). Given the interplay between obesity and hypertension, weight control efforts should be sustained, multidisciplinary, and closely integrated with other self-care behaviors, such as smoking cessation and medication adherence, for optimal cardiovascular risk reduction.

2.3.4 Diet Control

Dietary recommendations that are low in salt, cholesterol, and saturated fats are an important component of self-care practices that control hypertension. Patients with hypertension who were better educated showed greater adherence to diet and weight management. Higher educational attainment was also linked to improved outcomes, which may boost patients' access to healthy eating options and exercise schedules that can encourage self-care habits (Kazi et al., 2020). Dietary Approaches to Stop Hypertension, or DASH, is the diet that is most frequently advised for people with hypertension.

Ab Hamid, Mohd Yusof, Buhari, Abd Malek, and Md Noor (2024) developed and validated educational video content aimed at promoting dietary adjustments among patients diagnosed with hypertension. Using a Design and Development Research (DDR) methodology, the study progressed through three phases: content analysis, design and development, and evaluation. The Educational Content Validation Instrument in Health was applied to assess the videos in terms of objectives, structure/presentation, and relevance. The study indicated that, despite the availability of numerous educational videos on dietary management for hypertension, the development and impartial evaluation of the materials in this study provided a fact-

verified and expert-approved resource. They concluded that the validated content could serve as a reliable instructional tool for supporting hypertension management through lifestyle and dietary modifications.

This places a focus on foodstuff high in proteins, fiber, potassium, magnesium, calcium, beans, nuts, fruits, vegetables, whole grains, and low-fat dairy. It restricts foodstuffs that are heavy in sugar, saturated fat, and sugar. Its impact is strengthened by reducing salt intake as well. The development of the DASH diet has amply shown that it constantly decreases blood pressure in a wide variety of hypertension and prehypertension patients (Doran et al., 2017). According to a study on reduced salt eating habits done in Harar, 82% of participants followed the advice. While just 22% of people in North Carolina followed the suggested hypertensive diet (Hussen et al., 2020). An East Ethiopian study found that a diet of fresh fruit and vegetables, low-fat dairy products, and little saturated and total fat can lower systolic blood pressure by 55 mmHg and diastolic blood pressure by 3 mmHg. Limiting sodium consumption in hypertension patients to below 2.4g daily will lower blood pressure by 2–8 mmHg. Using less salt when cooking and restricting or avoiding salty meals may help persons with hypertension live longer and have lower rates of morbidity and mortality (Adam et al., 2021).

Diet control plays a central role in the prevention and management of hypertension, with strong evidence linking dietary patterns to blood pressure regulation. Excess sodium intake, low potassium consumption, and diets high in saturated fats have been shown to contribute to elevated blood pressure, while diets rich in fruits, vegetables, whole grains, and lean proteins promote blood pressure reduction (Mozaffarian et al., 2022). The Dietary Approaches to Stop Hypertension (DASH) diet remains one of the most effective dietary strategies, reducing systolic blood pressure by an average of 8–14 mmHg in both hypertensive and pre-hypertensive individuals (Sacks et al., 2021). These dietary effects are attributed to improved vascular function, reduced arterial stiffness, and favorable modulation of the renin–angiotensin–aldosterone system, reinforcing the role of diet control as a first-line lifestyle intervention in hypertension management.

Swami, Ghotekar, Prakash, Aggarwal, Margekar, Gogoi, and Ojha (2025) evaluated the effect of a modified Dietary Approach to Stop Hypertension (DASH) diet on glycemic control and insulin resistance in adults with type 2 diabetes mellitus (T2DM). Conducted as a quasi-experimental non-randomized trial at Lady Hardinge Medical College and Associated Hospitals, New Delhi, between May 2023 and November 2024, the study involved 60 participants with HbA1c < 7.5%, assigned to either a modified DASH diet group (n=30) or a standard diabetic diet group (n=30). Baseline and 12-week follow-ups measured fasting blood glucose (FBG), serum insulin, HbA1c, lipid profile, BMI, and HOMA-IR, with dietary adherence reinforced through regular follow-up. At 12 weeks, the modified DASH group achieved significantly greater reductions in FBG ($p=0.001$), HbA1c (within-group $p<0.001$; between-group $p=0.057$), and BMI ($p<0.001$) compared to the control group. While HOMA-IR improvement was more pronounced in the DASH group, intergroup differences were borderline and did not reach statistical significance. Generalized estimating equation analysis confirmed significant within-group improvements in weight, BMI, and glycemic measures for the DASH group. The authors concluded that the modified DASH diet yielded superior outcomes in glycemic control, insulin resistance, and weight management over 12 weeks, supporting its role as an effective dietary strategy for T2DM management.

Despite proven efficacy, sustaining long-term dietary changes remains a major challenge for hypertensive patients. Barriers include limited access to healthy foods, cultural dietary preferences, inadequate nutritional knowledge, and low motivation for adherence (Irazola et al., 2022). Studies suggest that continuous dietary counseling, culturally tailored meal plans, and technology-assisted monitoring can improve adherence rates and long-term blood pressure control (Akhuemonkhan et al., 2023). Additionally, integrating diet control strategies with other self-care behaviors, such as weight management and physical activity, can create a synergistic effect in reducing hypertension-related risks. Therefore, successful dietary interventions for hypertension require a combination of patient education, environmental support, and ongoing follow-up to ensure lasting behavioral change.

Interventional trials have consistently demonstrated the benefits of dietary modification in controlling blood pressure among hypertensive patients. The PREMIER study showed that participants who adopted the DASH diet with reduced sodium intake achieved significantly greater blood pressure reductions compared to those receiving standard lifestyle advice (Appel et al., 2021). Similarly, a randomized controlled trial by Swami et al. (2025) found that a modified DASH diet tailored for individuals with comorbid diabetes improved not only blood pressure but also glycemic control and body mass index, indicating broader cardiometabolic benefits. Other dietary approaches, such as the Mediterranean diet, have also shown significant antihypertensive effects, attributed to high intake of unsaturated fats, fiber, and antioxidant-rich foods (Filippou et al., 2022). These findings highlight the adaptability and effectiveness of structured dietary interventions in managing hypertension.

2.3.5 Smoking Cessation

In hypertensive patients, smoking raises the risk of cardiovascular problems. Patients who consume cigarettes run an increased chance of acquiring malignant hypertension as well as cardiovascular problems. Smoking cigarettes causes six million deaths each year worldwide (Hussen et al., 2020). Smokers who stop smoking following a cardiovascular disease or hypertension episode have better outcomes than those who continue to smoke, with the majority of the health advantages starting nearly immediately, claim Barbara et al. (2017). Medication, psychiatric interventions, behavioral interventions, telephone counseling, and the use of self-help materials through group therapy can all help smokers quit (Barbara et al., 2017).

Smoking cessation is widely recognized as a critical component in the management of hypertension due to its immediate and sustained cardiovascular benefits. Evidence indicates that quitting smoking can result in rapid reductions in both systolic and diastolic blood pressure within days to weeks, primarily due to improved vascular function and reduced sympathetic stimulation (Hara et al., 2024). A randomized controlled trial among hypertensive smokers in the GENTSMOKING study demonstrated that those who achieved sustained abstinence experienced significant reductions in mean arterial pressure compared to those who continued smoking,

underscoring the therapeutic value of cessation for blood pressure control (Tsai et al., 2023). These findings support integrating smoking cessation programs as a standard adjunct to pharmacological antihypertensive treatment to enhance overall cardiovascular outcomes.

Even though the short-term effects of smoking cessation on blood pressure are consistently positive, long-term outcomes are more complex. Longitudinal data from the CARDIA study revealed that individuals who quit smoking and subsequently gained ≥ 3 kg were at a higher risk of developing hypertension over four years, compared to both current smokers and abstainers who maintained their weight (Zhou et al., 2025). Similarly, Cho et al. (2024) reported that the protective cardiovascular effects of quitting were partially attenuated by post-cessation weight gain, which can offset reductions in blood pressure through increased peripheral resistance and metabolic strain. These findings highlight the need for smoking cessation interventions in hypertensive patients to be coupled with weight management strategies, ensuring sustained improvements in blood pressure and cardiovascular health.

Beyond direct blood pressure effects, smoking cessation substantially reduces the risk of adverse cardiovascular events in hypertensive populations. Former smokers have been shown to achieve better rates of blood pressure control and reduced cardiovascular morbidity compared to current smokers, even when adjusted for medication use and other lifestyle factors (Reid et al., 2021). A review by El-Shahawy and Brown (2023) emphasized that smoking cessation mitigates endothelial dysfunction, decreases arterial stiffness, and improves lipid profiles—changes that collectively lower cardiovascular risk in hypertensive patients. Therefore, clinicians are encouraged to incorporate structured cessation programs, combined with dietary and physical activity counseling, into hypertension management protocols to maximize the dual benefits of blood pressure regulation and cardiovascular risk reduction.

2.3.6 Moderation of Alcohol

Both high and moderate alcohol use, according to studies, can raise the risk of hypertension. Alcohol increases hunger and is high in calories, thus drinking frequently results in higher caloric intake and weight gain, both of which raise the risk of developing hypertension. Alcohol also interacts with certain antihypertensive medications thereby affecting the level of medication or increases side effects (Marhuenda et al., 2021). According to AHA (2019), limiting alcohol consumption can also help prevent high BP. For men, alcohol consumption should be limited to no more than two and for women not more than one. Adam et al., (2021) found that excessive alcohol consumption was related with elevated BP. In addition, 79.8 % of hypertension patients were alcohol abstainers.

2.4 Socio-Demographic Factors Associated with Self-Care in Hypertension

Self-care behaviors can be strongly correlated with socio-demographic characteristics. According to several research, having no co-morbid conditions, formal education, being older, knowing enough about hypertension, sex, religion, and social support were all positively correlated with good self-care behavior (Gelaw et al., 2021). Because of the higher frequency of the condition and the related morbidity and death in this age range, study has revealed that hypertension is prevalent among adults aged more than 50 years. According to a Dessie University research, elderly people were less likely to practice adequate self-care (Gelaw et al., 2021).

Socio-demographic factors play a significant role in shaping self-care practices among hypertensive patients, with age, sex, and education level emerging as consistent predictors. Older patients often exhibit better adherence to self-care behaviors, such as medication compliance, dietary modification, and regular blood pressure monitoring, possibly due to increased health awareness and perceived vulnerability to complications (Hailu et al., 2025). Conversely, younger patients may show lower engagement in self-care due to competing life priorities or a lower perceived severity of hypertension (Ramadhan et al., 2025). Education level also strongly influences self-care, with patients who have attained secondary education or higher demonstrating

greater adherence to lifestyle recommendations, likely because of better health literacy and ability to comprehend medical advice (Abza et al., 2024).

Stroke, dementia, heart failure, myocardial infarction, and renal failure are among negative health outcomes linked to uncontrolled hypertension. A 20mmhg rise in SBP above 125mmhg or 10mmhg rise above DBP of 75mmhg has been related to increase in the probability of vascular mortality as an unavoidable risk factor for high blood pressure (Ozoemana et al., 2019). Because they can read and comprehend instructions relevant to hypertension, patients with formal education have higher chances of practicing excellent self-care. This improves the practice of good SCP (Gebremichael et al., 2018).

Employment status and income have been shown to affect self-care behaviors in hypertension management. Formal employment and higher income levels are associated with better self-care adherence, as they facilitate access to healthcare resources, medications, and healthy food options (Osei-Yeboah et al., 2023). In contrast, financial constraints can limit a patient's ability to sustain dietary changes, afford medications, or attend follow-up appointments, thereby undermining self-care practices (Sogunle et al., 2022). Marital status also plays a role, with married individuals often reporting better adherence to treatment regimens and lifestyle changes due to spousal support and shared health responsibilities, whereas widowed or single individuals may experience lower adherence due to limited social support.

Additionally, those with formal education may be more likely than those without it to follow varied media and comprehend it more fully. Due to the possibility that individuals with comorbidities may be overmedicated and unable to practice good SCP, the absence of comorbidities is also positively correlated with excellent SCP. Additionally, comorbidities can worsen a patient's symptoms by impairing their quality of life and preventing them from engaging in beneficial SCP (Ademe et al., 2019).

Cultural norms, social networks, and environmental factors further shape self-care in hypertensive patients. Social support whether from family, friends, or community

groups—has been positively associated with adherence to self-care practices, including dietary control, smoking cessation, and physical activity (Hailu et al., 2025). Patients embedded in supportive social environments are more likely to receive reminders, encouragement, and assistance in managing their condition. Conversely, cultural dietary preferences, misconceptions about hypertension, and low access to healthcare facilities in rural settings can impede the adoption of recommended self-care behaviors (Yakubu et al., 2023). These findings highlight the importance of tailoring hypertension self-care interventions to address socio-demographic realities, ensuring they are culturally sensitive, socially supportive, and accessible to diverse patient groups.

Social support, which can take the form of physical, financial, or psychological assistance from family, friends, and community members, is a key factor in self-care practices. Such support has been demonstrated to foster resilience and boost confidence in individuals with chronic conditions like hypertension, enabling them to carry out or maintain SCP (Barbara et al., 2017). Through a variety of support groups, patients also get peer assistance.

Patients form organizations for the purpose of providing one another with support, such as emotional support, financial help, or even food relief (Sigmund et al., 2020). Andrew et al., (2020) research in Uganda revealed that networks of family, friends, and peers significantly contribute to better self-care practice adherence and, consequently, good blood pressure control. The social support includes finances to buy medicine, food and carter for transport to the health facilities whenever there is need as well as home necessities.

2.5 Theoretical Framework

The study was anchored on health belief model (HBM). This model was first developed by Rosenstock, Hochbaum and Regel (1950) while they were working for the American public health service, will serve as the study's main theoretical framework. The theory was later revised in 2015 (Skinner et al., 2015). In reaction to a failing free TB health screening initiative, it was created. Adults could receive free

T.B. screening x-rays through the T.B. screening program from mobile units that were appropriately positioned across different areas. After realizing that just a mere number of adults used the free services, the program's administrators started looking into the reasons why more adults did not. Hochbaum, though, started looking into what drove the few individuals who came forward. He soon discovered that their perceptions of the disease's risk and the action's apparent advantages were important drivers of their motivation. The key HBM constructs, which differ between people and forecast involvement in health-related behaviors, are as follows.

Perceived Susceptibility

This estimate of the possibility of a health problem is purely speculative. People will take action to reduce their risk if they think they are predisposed to a particular health problem, according to the HBM. A person is more likely to engage in activities to lower their risk of contracting the illness or self-care measures to prevent complications of hypertension if they believe there is a high likelihood that the health issue, such as hypertension or hypertension complications, will directly harm them.

Perceived Severity

This assessment of the gravity of a health challenge and its likely results is wholly subjective. The HBM states that if people see a health issue as a big concern, they are more likely to take activities that will either prevent a health issue from occurring or minimize its severity. Before taking preventive measures like sticking to self-care routines, people must regard hypertension as a serious condition with substantial repercussions and ramifications on their bodily and social lives.

Perceived Benefits

This is an individuals' assessment of the advantages or efficacy of forming a healthy habit in order to reduce their chance of getting sick. A person is more inclined to act in a certain way if they think it would reduce their risk of developing a health problem or diminish the severity of that problem, regardless of the objective facts about how effective the action is. As a result, the advantages are perceived in terms of perceptions

about the effectiveness of the recommended preventive health measures, such as consistent adherence to self-care practices to avoid complications from hypertension.

Perceived Barriers

This is a person's assessment of the difficulties of changing behavior. Obstacles like expense, costs, time commitment, etc. may prevent someone from engaging in the health-promoting behavior even if they see a health state as risky and think that doing so will successfully reduce the hazard. Perceived benefits therefore need to outweigh imagined limits for behavior to change.

Modifiable Variables

The HBM claims that by altering how seriously, easily, and advantageously behaviors related to health are regarded, many variables can indirectly affect those behaviors. Individual characteristics, like demographic, psychological, and structural factors, might affect how acts connected to health are perceived (i.e., the perceived severity, vulnerability, benefits, and challenges). Age, sex, race, ethnicity, education, and other demographic characteristics are among the demographic factors.

Peer pressure, socioeconomic class, and personal experience are psychological factors. Know how regarding a certain disease and prior exposure to the disease are examples of structural variables. These aspects may influence how someone perceives things. Given one's perceived benefits from employing self-care practices effectively, their sensitivity to and intensity of suffering from the negative effects of hypertension, and the obstacles they face in sticking to self-care practices.

Cues to Action

HBM noted that a little push is needed to encourage taking part in actions that promote good health. Action signals can come from within, such as physiological cues like pain or symptoms, or from beyond, such as information from the media or medical professionals encouraging participation in health-related actions.

Self-Efficacy

This is how a person views his or her ability to carry out a behavior successfully in the face of challenges. Self-efficacy in this literature refers to the conviction in one's capacity to uphold self-efficacy in HBM. Therefore, experience with mastery is essential for self-efficacy.

The Assumptions in HBM

The HBM makes the assumption that a person will act in a way that is connected to their health if they believe that a bad health state can be prevented. A person will also take preventive action if they perceive that by following a prescribed course of action, a harmful health condition can be averted. Finally, it is assumed that a person will act in a way that is connected to their health if they have confidence in their knowledge and abilities to carry out the suggested course of action.

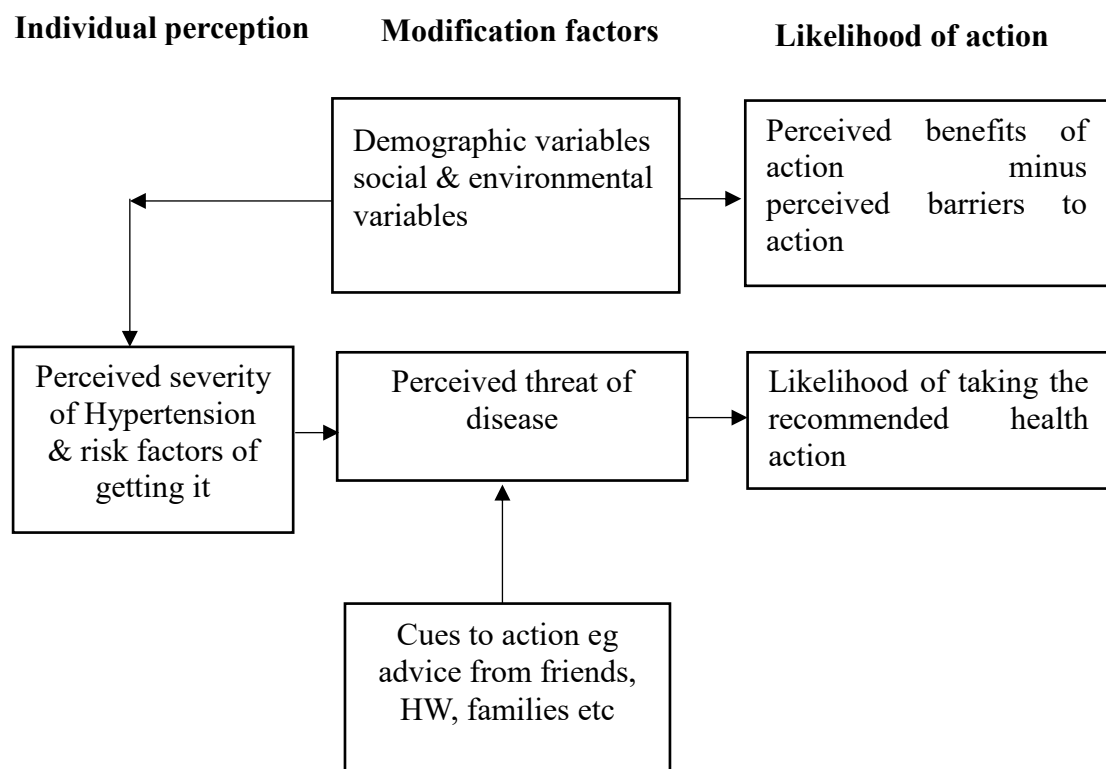


Figure 2.1: Theoretical Framework

2.6 Conceptual Framework

There is an inter-play between the factors that contribute to self-care practices. The study's independent variables were socio-demographic, factors behavioral factors and knowledge on hypertension. The dependent variable was adherence to self-care practices. The demographic factors were age, gender, education, occupation, marital status and amount of income. The factors contribute to knowledge and practice of self-care activities.

Self-care practices also involves using financial resources for example buying prescribed medication, transport arrangement to the hospital for follow-up clinic visits or when ill, purchasing healthy food and therefore a patient who had resources would possibly adhere to the prescribed self-care practices unlike a patient who was poor. The outcome variable was level of self-care practices which contributed to a reduction in complications of hypertension and rising blood pressure control amongst hypertensive patients. Self-care practices was, indicated through adherence to prescribed medication, BMI of between 18.5 to 24.9 kg/m².

This relationship between the factors was illustrated on the figure 2.1 below.

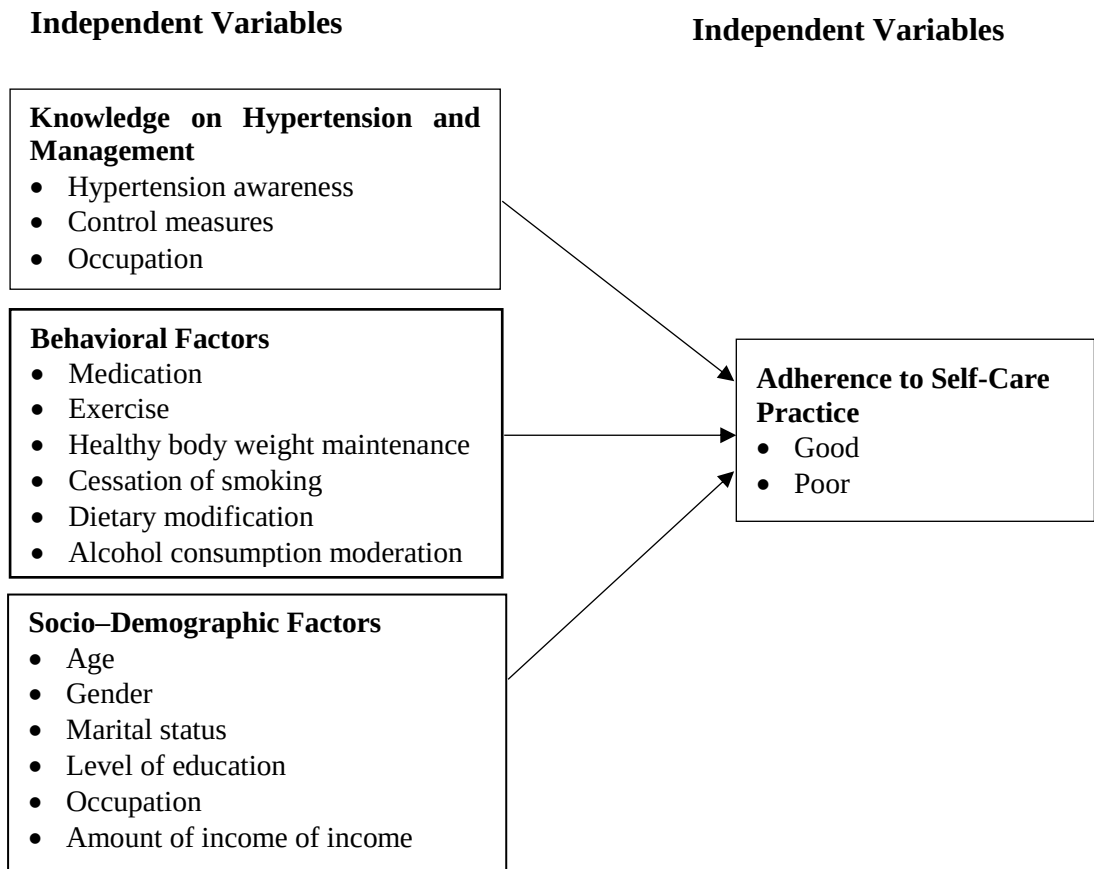


Figure 2.2: Conceptual Framework

CHAPTER THREE

METHODOLOGY

3.1 Study Design

The research design for this study was analytical cross-section study as it was the most suited for establishing preliminary evidence for a causal relationship. In addition, the design enabled the researcher to assess prevalence of disease in a clinic based samples as well as assess the association between the exposure and the outcome (Kramer, 1988; Hennekens & Buring, 1987). In regard to the objective of this study, the design enabled the researcher to examine adherence level of self-care practices and related individual factors amongst hypertensive patients who visited medical outpatient clinic at Kenyatta National Hospital for a better outcome (controlled blood pressure). The design was also relatively inexpensive and faster as it did not require follow up of the participants. An analytical cross-sectional study was conducted at the Medical Outpatient Clinic (MOPC) of Kenyatta National Hospital, collecting data from January to March 2024. The clinic manages approximately 1,680 hypertensive cases annually, with dedicated hypertension clinic days held every Wednesday afternoon.

3.2 Study Area

The study took place in Nairobi County at the medical outpatient clinic in Kenyatta National Hospital. The hospital was situated 3.5 kilometers to the west of Nairobi's Upper Hill neighborhood. The hospital facility was 45.7 acres in size (KNH report, 2016). Currently, it is the biggest teaching and referral facility in the nation. Currently, the MOPC had 18 different medical clinics conducted from Mondays through Friday at different times of the day. Some are conducted during morning hours and afternoons. Hypertension clinic is normally conducted every Wednesday afternoon from 2pm. Both new and old patients are reviewed by medical officers and complicated and new patients reviewed by physicians. An average of 10 and 25 new and old respective patients are seen every week translating to 140 hypertensive patients monthly and a total of 420 hypertensive patients in three months. In one year, a total of 1680 hypertensive patients were seen at the MOPC though patients are given

appointments every 3 months (KNH medical records, 2021). The clinic had a total of 23 staffs who were; 12 nurses, 3 medical officers, 3 health information officers, 1 nutritionist, a messenger and 2 support staffs who help in the cleaning.

3.3 Study Population

The study population were adults aged above 18 years, diagnosed with hypertension and taking antihypertensive medications with at least six months of follow up.

3.3.1 Sample Size Determination

The sample size for the study was estimated using fisher's et.al 1998 formula using a prevalence of 24% according to the stepwise survey (Kenya Ministry of Health, 2016) ,5% precision and a 95% confidence interval as follows.

$$n = \frac{Z^2 P(1-P)}{d^2}$$

$$d^2$$

Where n signified sample size when the population size was greater than 10000

Z signified the standard normal deviation i.e. 1.96 set at a 95% confidence level

P signified the proportion of population with desired characteristics

1-P signified proportion of population without the desired characteristics

d² signified the degree of precision

$$= \frac{(1.96^2)(0.24)(1-0.24)}{(1-0.95)^2}$$

$$= \frac{3.8416 \times 0.1824}{(0.05)^2}$$

$$= \frac{3.8416 \times 0.1824}{0.0025}$$

$$0.0025$$

$$= \frac{0.70070784}{0.0025}$$

$$= 280.283136$$

$$n=280.$$

Since the population was less than 10000, I employed the use of finite correction factor formula to be able to calculate the required study sample size (Mugenda & Mugenda.2003).

$$nf = n/1 + (n/N)$$

Where nf signified the desired sample when the population was less than 10000

n signified the desired sample size when population was greater than 10000

N signified the study population estimate.

$$nf = 280/1 + (280/420)$$

$$= \frac{280}{1+0.666}$$

$$= \frac{280}{1.666}$$

$$nf = 168.$$

$$nf = 168.$$

Therefore, the sample size was 168

3.3.2 Inclusion/Exclusion Criteria

Subjects were patients aged between 18 years and 75 years, diagnosed with hypertension and taking antihypertensive medications with at least six months of follow up in the clinic. However, patients with co-existing terminal or debilitating condition that could interfere with participation in self-care, including stage iv cancer, severe heart disease and advanced diabetes were excluded from the study.

3.3.3 Sampling Procedure

Systematic sampling technique was used to recruit the study respondents. The formula

$$i = \frac{N}{n} \text{ where } N = \text{Population, } n = \text{sample size and } i = \text{sampling interval.}$$

Thus the sample interval, $i = \frac{420}{280} = 2.5$

A study participant who met the inclusion criteria was selected based on lottery method as the first one then every third patient in the order of arrival in the health clinic was selected until the sample size was obtained. This sampling techniques was chosen because it was easy and cheap (Kothari, 2004).

3.4 Data Collection

3.4.1 Data Collection Tools

Data was gathered using a standardized questionnaire that was administered by the interviewer. Socio-demographic details, hypertension self-care routines, and understanding of hypertension and management were all covered in the questionnaires. Utilizing the six self-care dimensions found in the validated Hypertension Self-care Activity Level Effect (H-SCALE), self-care usage was evaluated. A validated Hypertension Evaluation of Lifestyle and Management (HELM) scale was employed to evaluate hypertension knowhow. There were 12 modified items spread across three categories, including general understanding about hypertension, managing one's lifestyle and medications, and measuring and setting goals.

3.4.1.1 Research Assistants

The researcher made use of research assistants. These were two senior nurses at least five years of experience working in other medical facilities. Data collectors were trained for one day on the objectives, tools and data collection approach.

3.4.2 Quality Assurance

To ensure quality of the data collection instrument, the questionnaire was piloted and tested for both reliability and validity.

3.4.2.1 Pretesting of the Instrument

This entailed determining whether the questionnaire was appropriate. The caliber of the research tool determined how well the investigation turned out (Bryman & Bell, 2011). In order to ensure dependability, the questionnaires were given to 10% (or twenty) of the patients in the cardiac outpatient clinic. It was expected that the respondents who were chosen for the pretesting would answer the questions. It determined whether the instrument would be capable of accurately measuring the construct. More so informed the researcher on the ease of answering the items, its comprehensiveness and if even time allocated for data collection was adequate. Thus, pretesting helped in checking the instrument's clarity, simplicity, understandability, consistency and coherency. Respondents did not participate in the actual study.

3.4.2.2 Validity of the Instrument

Validity test was carried out to guide the researcher in establishing whether the instrument actually measured what it was designed to measure (Mugenda & Mugenda, 2003). So, instrument validity described how accurately the phenomenon being studied was measured by the instrument. The use of content validity was used to validate the study's instrument. The researcher relied on the expert judgment from the supervisor, one medical officer and two nurses working at KNH. The researcher used this test as it coincided with study objectives.

3.4.2.3 Reliability of the Instrument

The instrument's level of dependability determines how consistently and steadily it can give results. According to Orodho (2004), a trustworthy instrument produces comparable outcomes after numerous iterations. Cronbach's Alpha was then used in the study to check the internal consistency of the instrument's items and features. According to Creswell (2012), a composite Cronbach Alpha, of at least 0.7 for all items under consideration is necessary for a study to be considered successful. Accordingly, a dependability coefficient, of 0.7 is regarded as satisfactory. In this study, the findings showed that level of knowledge on hypertension, level of adherence to self-care practices and sociodemographic characteristics associated with adherence to self-care practice had alpha values of 0.754, 0.814 and 0.850 respectively. The scale combination was 0.784 which was acceptable reliability scale. The questionnaire was hence considered sound and reliable since it met the reliability threshold of 0.7.

3.4.3 Data Collection Procedure

The researcher first wrote a letter to the facility management to notify them of the study to be undertaken in the facility. The letter stated the objectives of the study and its significance. The researcher then reached out to the research assistants who were responsible for administering the instrument. The research assistants first sought the consent of the respondents before the interview and enlightened them on study objectives. After the respondents' consent, the researcher administered the questionnaires through the research assistants to the respondents as exit questionnaires. This enabled the respondents to have adequate time to respond to the questions and for a good response rate. Moreover, it gave the respondents a chance to seek clarity on items which were not clear or they had difficulties in understanding.

3.5 Data Management

Quantitative data was generated from the interviewer-administered questionnaires and entered into the data base. Data collected from the study were handled with extreme discretion and were not shared with any other interested party.

3.5.1 Data Analysis

The statistical software for social sciences (SPSS) version 26 was used to enter, check, and clean the data. Measures of central tendency, measures of dispersion, and measures of frequency were used in descriptive statistics to define the socio-demographic characteristics connected to self-care behaviors for hypertension. Data was displayed as charts and tables. Following that, variables related to the degree of adherence to hypertension self-care behaviors were examined using chi square and binary logistic regression. Hypertension Evaluation of Lifestyle and Management (HELM) scale was used to assess respondent's knowledge on hypertension. Knowledge was categorized as good when the score was above 9 and poor when the score was less than 9 (Gelaw et al., 2020).

It had three domains mainly general knowledge on hypertension, lifestyle and medication management and measurement and treatment goals and each was rated from 0-4 giving a total score of 0-12. One was considered adherent if they scored above 9 and non-adherent if they scored less than 9. The H-SCALE had six domains which were: following up with medicine uptake, managing body mass index, exercises, quitting smoking, moderated alcohol intake, and low salt intake. Responses from the six measures were tabulated (range 0-6) and self-care practices was regarded as suitable when the patients adhered positively to more than four areas out of the six and poor when the score was below four. Medication adherence subscale had 3 items and each was rated from 0-7 giving a total score of 21. Adherence to medication was categorized as good when the score was above 14 and poor when the score was less than 14 (Gelaw et al., 2020).

Weight management adherence was categorized as good adherence when the score was 10 and poor when the score was less than 10. Smoking adherence was categorized as good when there was no smoking and poor when there was smoking. Low salt diet adherence was categorized as good when the score was 6 and poor when the score was less than 6. Physical exercise was categorized as good when the score was 8 out of 14 and poor when the score was less than 8. Adherence to alcohol moderation was

categorized as good adherent when the score was 12 and poor when the score was less than 12.

3.5.2 Data Storage

To safeguard respondent confidentiality and store the data in a secure location, the data was kept on just a few specified computers with passwords that can be changed on a regular basis.

3.6 Ethical Considerations

The Ethics and Research Committee (ERC) of the University of Nairobi and Kenyatta National Hospital was consulted for ethical approval (Ref: P399/04/2023) and a research permit from the National Council for Science, Technology, and Innovation, (NACOSTI) License No: NACOSTI/P/23/28690 was obtained. The researcher then sought permission from KNH management before collecting information from the correspondents who were issued with consent document showing their willingness to participate in the study. When they consent to participate in the study, they were given the assurance that they could opt out at any moment and that not participating would have no consequences for them. The confidentiality of the responders was safeguarded throughout the study with care. On the questionnaire, names or any other means of identification was not used. All information gathered was kept, examined, and reported in ways that prevented participant identify. During data collection, the COVID-19 prevention protocol was kept.

CHAPTER FOUR

RESULTS

4.1 Introduction

In this chapter, the researcher presents the findings based on the objectives of the study after having conducted the research.

4.2 Response Rate

The response rate was established to determine the representativeness and reliability of the data collected for accurate conclusions. A total of one hundred and sixty-eight (168) respondents were sampled for participation in the study between January and March 2024. Out of these, one hundred and sixty-seven (167) respondents successfully completed and returned the questionnaires. This yielded a response rate of 99.4 percent, which is considered exceptionally high and well above the commonly accepted threshold for survey research. According to Holtom, Baruch, Aguinis, and Ballinger (2022), the average response rate for empirical survey studies stands at approximately 65%. Likewise, Orodho (2009) asserts that a response rate of at least 50% is sufficient for generalizing the findings to the broader target population. Therefore, the 99.4% response rate achieved in this study provides strong justification for the credibility and generalizability of the findings regarding adherence to self-care practices among hypertensive patients attending the Medical Outpatient Clinic at Kenyatta National Hospital.

4.3 Socio-Demographic Characteristics of the Study Participants

Majority of the study participants 47.6% (n=79) were aged between 39 to 59 years old. More than 50% (n=88) of the study participants were female. Those who reported they were married were 66.5% (n=111). Half of the study participants 50.3% (n=84) had level of education as college and above. Thirty-one point seven percent of study participants had their occupation as business and 74.5% (n=123) were residing in the urban area. Almost 60% (n=92) of the study participants had income level >10,000

and 30.7% (n=51) had duration of hypertension as <2 years. Finally, 56.6% (n=94) of the study participants reported they had history of hypertension in the family (Table 4.1).

Table 4.1: Socio-Demographic Characteristics of the Study Participants

Variable	Category	Frequency (n)	Percentage (%)
Age	19-38	45	27.1
	39-59	79	47.6
	60-75	42	25.3
Total		166	100
Gender	Male	79	47.3
	Female	88	52.7
Total		167	100
Marital status	Single	38	22.8
	Married	111	66.5
	Divorced	8	4.8
	Widowed	10	6.0
Total		167	100
Level of education	Uneducated	7	4.2
	Primary education	27	16.2
	Secondary education	49	29.3
	College and above	84	50.3
Total		167	100
Occupation	H/wife	11	6.6
	Student	21	12.6
	Farmer	31	18.6
	Government employee	40	24.0
	Business	53	31.7
	Non-governmental organization	11	6.6
Total		167	100.0
Residence	Urban	123	74.5
	Rural	42	25.5
Total		165	100
Income	<kshs 5,000	32	20.0
	Kshs 5000-10000	36	22.5
	>10,000	92	57.5
Total		160	100
Duration of hypertension	<2 years	51	30.7
	2-5 years	31	18.7
	5-10years	39	23.5
	>10 years	45	27.1
Total		166	100
Family history of hypertension	Yes	94	56.6
	No	72	43.4
Total		166	100

4.3 Level of Knowledge on Hypertension among the Study Participants

On the general hypertension knowledge, majority of the study participants 81.9% (n=136) and 85.5% (n=141) gave correct answer on definition of hypertension and whether hypertension can be controlled respectively. On lifestyle and medication management, majority of the study participants 90.3% (n=149), 56.6% (n=94) and 50.3% (n=83) gave correct answer on adherence to medication, exercise and diet respectively. On measurement and treatment goals, 85.0% (n=142), 74.7% (n=124) and 91.0% (n=152) gave correct answer on individual with hypertension should go for regular check-up, and poor compliance to treatment can lead to complications of hypertension respectively (Table4.2).

Table 4.2: Knowledge on Hypertension among the Study Participants

Domain	Item number	Item content	Correct (%) n	Incorrect (%) n
General hypertension knowledge	1	Definition of hypertension	81.9% (136)	18.1% (30)
	2	Hypertension can be controlled	85.5% (141)	14.5% (24)
	3	Causes of hypertension	49.4% (81)	50.6% (83)
Lifestyle and medication management	4	Adherence to medication	90.3% (149)	9.7% (16)
	5	Adherence to diet	50.3% (83)	49.7% (82)
	6	Adherence to moderation of alcohol	47.0% (77)	53.0% (87)
	7	Adherence to exercise	56.6% (94)	43.4% (72)
Measurement and treatment goals	8	Individual with hypertension should go for regular check-up	85.0% (142)	15.0% (25)
	9	Regularity of checking blood pressure	18.3% (30)	81.7% (134)
	10	Poor compliance to treatment can lead to complications of hypertension	91.0% (152)	9.0% (15)

Knowledge on hypertension had three domains mainly general knowledge on hypertension, lifestyle and medication management and measurement and treatment

goals and each was rated from 0-4 giving a total score of 0-12. One was considered having good level of knowledge if they scored above 9 and poor level of knowledge if they scored less than 9. On the level of knowledge 37.3% (n=62) and 62.7% (n=104) of the study participants had good and poor level of knowledge on hypertension respectively, Figure 4.1.



Figure 4.1: Level of Knowledge on Hypertension

4.4 Level of Adherence to Self-Care Practice among the Study Participants

4.4.1 Medication Adherence

Majority of the study participants 87.3% (n=145) reported they took blood pressure medications every day for 7 days in a week and 63.3% (n=105) said they did not take blood pressure medication same time every day for 7 days. More than 80% (n=136) of the study participants reported they took the recommended dosage of the antihypertensive medications, Table 4.3.

Table 4.3: Medication Adherence

Variable	Category	Frequency (n)	Percentage (%)
Take blood pressure medication every day for 7 days in a week	Yes	145	87.3
	No	21	12.7
Total		166	100
Take blood pressure medication same time every day for 7 days	Yes	61	36.7
	No	105	63.3
Total		166	100
Take the recommended dosage of the antihypertensive medications	Yes	136	81.9
	No	30	18.1
Total		166	100

Medication adherence subscale had 3 items and each was rated from 0-7 giving a total score of 21. Adherence to medication was categorized as good if the score was above 14 and poor if the score was less than 14 (Gelaw et al., 2020). On medication adherence 86.5% (n=134) and 13.5% (n=21) of the study participants had good and poor medication adherence respectively (Figure 4.2).

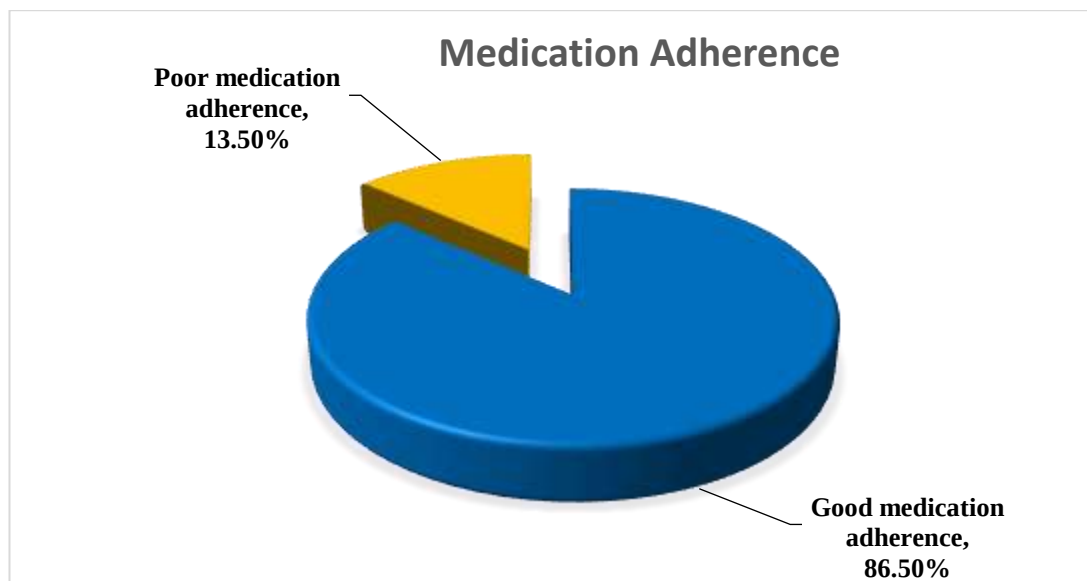


Figure 4.2: Medication Adherence

4.4.2 Alcohol Drinking

Majority of the study participants 60.2% (n=100) reported no days per week they drank alcohol. Approximately 60% (n=99) said on typical days, they did not drink and 58.4%

(n=97) reported none as the largest number of drinks they had on any given day within the last month (Table 4.4).

Table 4.4: Alcohol Drinking

Variable	Category	Frequency (n)	Percentage (%)
Days per week you drink alcohol	None	100	60.2
	1-3 days	10	6.0
	4-6 days	52	31.3
	7 days	4	2.4
Total		166	100
On a typical days, number of drinks you normally have	None	99	59.6
	1-2 drinks	5	3.0
	3-4 drinks	14	8.4
	>4 drinks	48	28.9
Total		166	100
Largest number of drinks you had on any given day within the last month	None	97	58.4
	1-2 drinks	21	12.7
	3-5 drinks	18	10.8
	>5 drinks	30	18.1
Total		166	100

Alcohol drinking subscale had 3 items and each was rated from 0-4 giving a total score of 12. Adherence to alcohol moderation was categorized as good adherent if the score was 12 and poor if the score was less than 12. On adherence to alcohol moderation, 57.8% (n=96) and 42.2% (n=70) of the study participants had good and poor adherence to alcohol moderation respectively (Figure 4.3).



Figure 4.3: Adherence to Alcohol Moderation

4.4.3 Smoking

Majority of the study participants 92.7% (n=152) and 92.7% (n=152) reported none as the number of cigarettes smoked in a day and number of cigarettes smoked in a day (Table 4.5).

Table 4.5: Smoking

Variable	Category	Frequency (n)	Percentage (%)
Number of cigarettes smoked in a day	None	152	92.7
	1-2	9	5.5
	3-5	1	0.6
	>5	2	1.2
	Total	164	100
Number of cigarettes smoked in a week	None	152	92.7
	< 1 packet	6	3.7
	One packet	5	3.0
	>1 packet	1	0.6
	Total	164	100

Smoking adherence was categorized as good if there was no smoking and poor if there was smoking. Majority of the study participants 92.7% (n=152) had good smoking adherence while 7.30% (n=12) had poor smoking adherence (Figure 4.4).

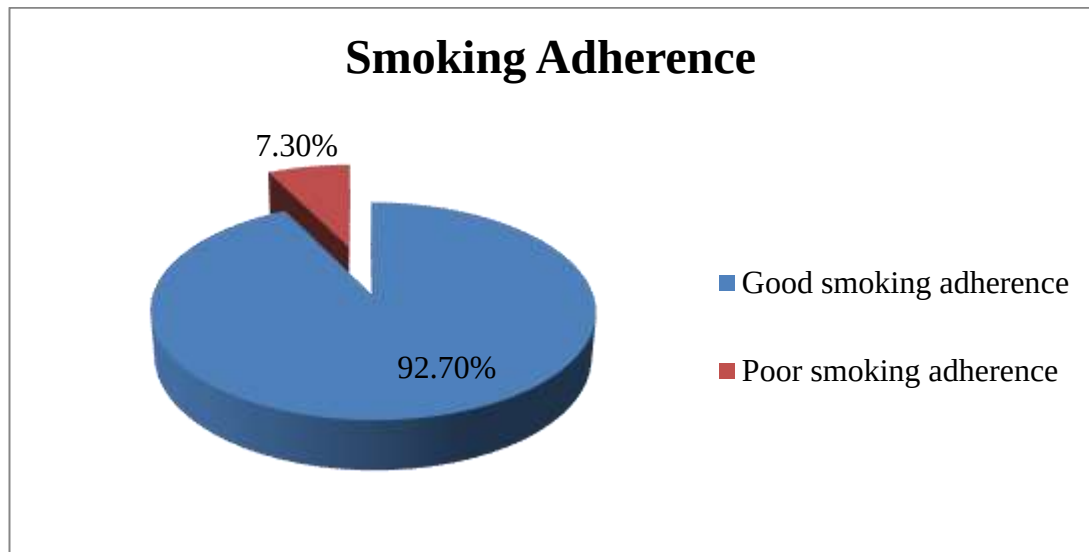


Figure 4.4: Smoking Adherence

4.4.4 Physical Activity

More than 70% (n=121) of the study participants reported 1 to 2 days in the past 7 days they did at least 30 minutes total of physical activity and 43% (n=71) reported none as the days in the past 7 days they did specific exercise activity (Table 4.6).

Table 4.6: Physical Activity

Variable	Category	Frequency (n)	Percentage (%)
Days in the past 7 days you did at least 30 minutes total of physical activity	1 – 2 days	121	73.8
	3- 4 days	43	26.2
	Total	164	100
Days in the past 7 days you did specific exercise activity	None	71	43.0
	1-2 days	61	37.0
	3-4 days	16	9.7
	5 days	17	10.3
Total		165	100

Physical exercise subscale had 2 items and each was rated from 0-7 giving a total score of 14. Physical exercise was categorized as good if the score was 8 out of 14 and poor if the score was less than 8. On physical activity adherence, 27.3% (n=45) and 72.7% (n=120) of the study participants had good and poor physical activity adherence respectively (Figure 4.5).

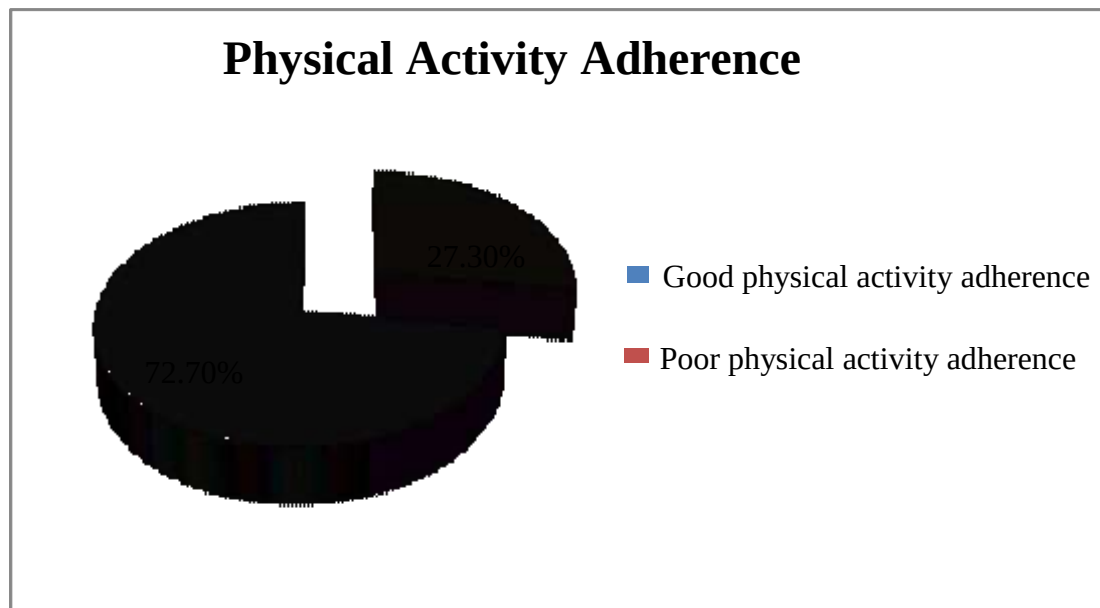


Figure 4.5: Physical Activity Adherence

4.4.5 Low Salt Diet Adherence

Majority of the study participants 62.7% (n=104) eat smoked meat and 91% (n=151) added salt to food when cooking. Almost 80% (n=132) of the study participants said too much salty foods was good for hypertensive patients and 91.3% (n=147) reported they did not add salt on fruits before eating. Almost 70% (n=116) of the study participants reported they liked salty meat and 77.1% (n=128) reported that not adding more salt on table food makes the food delicious (Table 4.7).

Table 4.7: Low Salt Diet Adherence

Variable	Category	Frequency (n)	Percentage (%)
Eat smoked meat	Yes	104	62.7
	No	62	37.3
Total		166	100
When you use salt in food	Add salt to food on table	15	9.0
	Add salt to food when cooking	151	91.0
Total		166	100
Too much salty foods is good for hypertensive patient	Yes	35	21.0
	No	132	79.0
Total		167	100
Add salt on fruits before eating	Yes	14	8.7
	No	147	91.3
Total		161	100.0
Like salty meat	Yes	116	69.9
	No	50	30.1
Total		166	100.0
Adding more salt on table food makes the food delicious	Yes	38	22.9
	No	128	77.1
Total		166	100.0

Low salt diet subscale had 6 items and each was rated from 0-1 giving a total score of 6. Low salt diet adherence was categorized as good if the score was 6 and poor if the score was less than 6. On low salt diet adherence, 15.1% (n=25) and 84.9% (n=141) of the study participants had good and poor low salt diet adherence respectively (Figure 4.6).

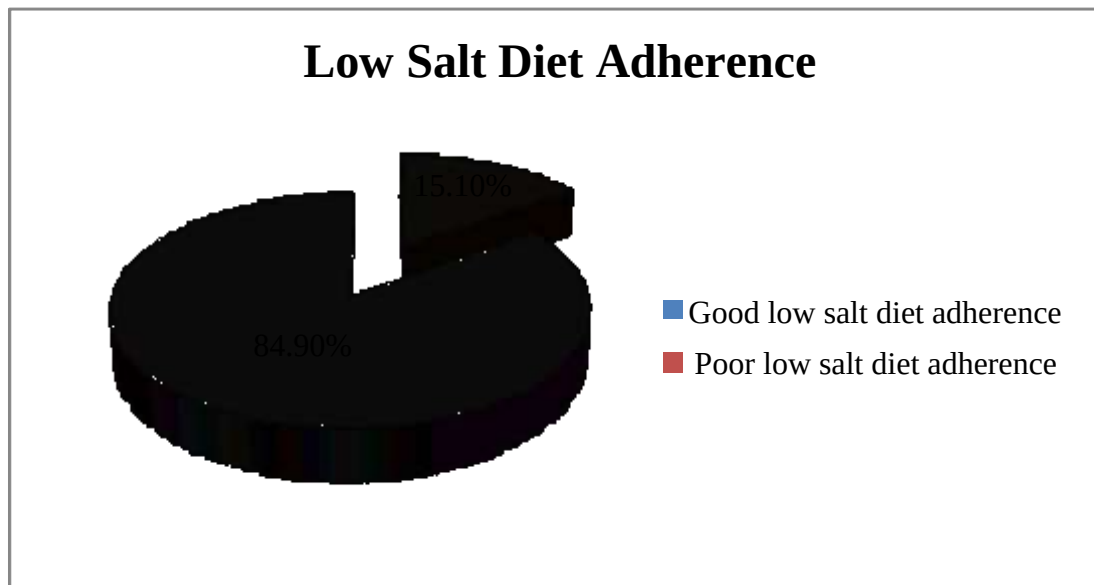


Figure 4.6: Low Salt Diet Adherence

4.4.6 Weight Management

Eighty-six percent of the study participants strongly agreed that they had eaten plenty of fruits and vegetables because it helped in controlling weight and 86.7% (n=143) strongly disagreed that eating smoked salty meat helped in controlling weight. On whether battered whole bread and smokies aided in controlling weight and performing normal duties was enough exercise, 87.7% (n=142) and 58.6% (n=92) of the study participants strongly disagreed respectively. On whether apart from normal daily activities, it was important to engage in physical exercise and walking for at least 30 minutes every day was part of exercise and helped in controlling weight, 84.4% (n=141) and 90.0% (n=144) of the study participants strongly agreed respectively. Eighty-four percent, 77.6% (n=125) and 84.0% (n=136) of the study participants strongly disagreed that eating more fatty foods helped in controlling body weight, failure to observe recommended exercises and diet maintained weight, and daily exercises led to weight gain respectively. Just more than 92% (n=145) of the study participant strongly agreed that eating more vegetables and less meat daily helped in controlling body weight (Table4.8).

Table 4.8: Weight Management

Variable	Category	Frequency (n)	Percentage (%)
I have eaten plenty of fruits and vegetables because it helps in controlling weight	Strongly agree	141	86
	Strongly disagree	23	14
Total		164	100
Eating smoked salty meat helps in controlling weight	Strongly agree	22	13.3
	Strongly disagree	143	86.7
Total		165	100
Battered whole bread and smokies aid in controlling weight	Strongly agree	20	12.3
	Strongly disagree	142	87.7
Total		162	100
Performing normal duties is enough exercise	Strongly agree	65	41.4
	Strongly disagree	92	58.6
Total		157	100.0
Apart from normal daily activities, it is important to engage in physical exercise	Strongly agree	141	84.4
	Strongly disagree	19	11.9
Total		160	100
Walking for at least 30 minutes every day is part of exercise and helps in controlling weight	Strongly agree	144	90.0
	Strongly disagree	16	10.0
Total		160	100
Eating more fatty foods helps in controlling body weight	Strongly agree	26	16.0
	Strongly disagree	136	84.0
Total		162	100.0
Eating more vegetables and less meat daily helps in controlling body weight	Strongly agree	145	91.2
	Strongly disagree	14	8.8
Total		159	100
Failure to observe recommended exercises and diet maintain weight	Strongly agree	36	22.4
	Strongly disagree	125	77.6
Total		161	100
Daily exercises lead to weight gain	Strongly agree	26	16.0
	Strongly disagree	136	84.0
Total		162	100

Weight management subscale had 10 items and each was rated from 0-1 giving a total score of 10. Weight management adherence was categorized as good adherence if the score was 10 and poor if the score was less than 10. On adherence to weight

management, 30.9% (n=51) and 69.1% (n=114) of the study participants had good and poor adherence to weight management respectively (Figure 4.7).

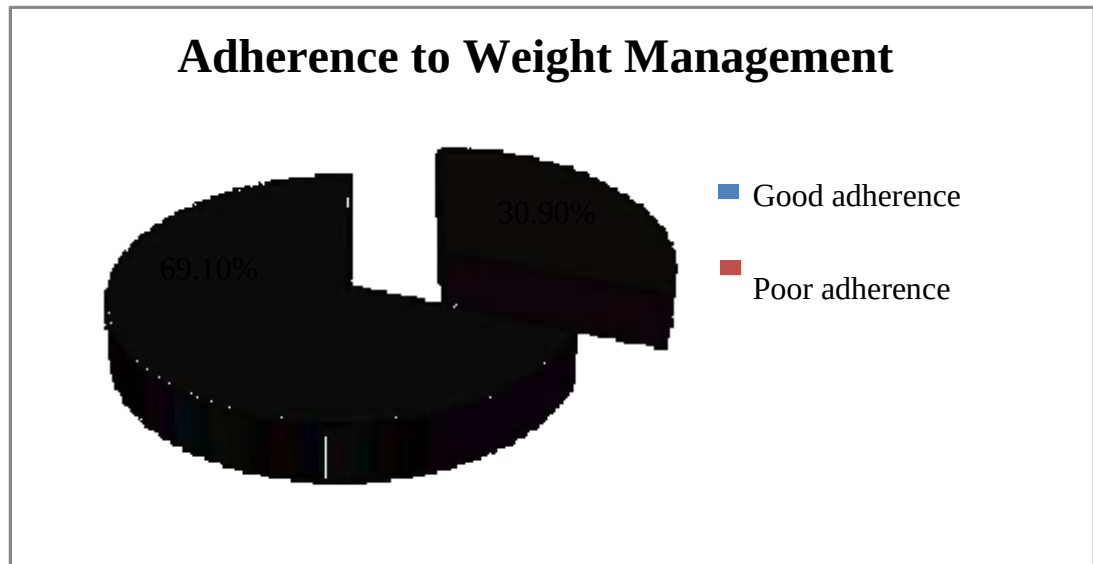


Figure 4.7: Adherence to Weight Management

Overall self-care practices was perceived as good when the patient positively adhered to more than 4 domains out of the six and poor if they adhered to less than 4 domains. On adherence to self-care practices, 34.7% (n=58) and 65.3% (n=109) of the study participants had good and poor adherence to self-care practice respectively (Figure 4.8).



Figure 4.8: Adherence to Self-Care Practices

4.5 Socio-Demographic Characteristics Associated with Adherence to Self-Care Practice among Study Participants

None of the socio-demographic characteristics showed a statistically significant association with adherence to self-care practice (Table 4.9).

Table 4.9: Association between Socio-Demographic Characteristics and Self-Care Practices

Variable	Category	Adherence to self-care practice		Chi-square/fisher exact value	df	p-value
		Poor	Good			
Age	19-38	27	18	Chi-square test= 0.925	2	0.630
	39-59	53	26			
	>60 <75	29	13			
Gender	Male	52	27	Chi-square test= 0.020	1	0.887
	Female	57	31			
Marital status	Single	25	13	Fisher exact test= 2.801		0.447
	Married	69	42			
	Divorced	7	1			
	Windowed	8	2			
Level of education	Uneducated	6	1	Fisher exact test= 4.258		0.238
	Primary education	18	9			
	Secondary education	36	13			
	College and above	49	35			
Occupation	H/wife	7	4	Chi-square test= 5.653	5	0.348
	Student	11	10			
	Farmer	22	9			

Variable	Category	Adherence to self-care practice		Chi-square/ Fisher exact value	df	p-value
		Poor	Good			
Residence	Government employee	25	15	Chi-square test= 0.008	1	0.929
	Business	39	14			
	Non-Governmental Organization	5	6			
	Urban	80	43			
	Rural	27	15			
Income	<kshs 5,000	20	12	Chi-square test= 0.258	2	0.879
	Kshs 5000-10000	24	12			
	>10,000	62	30			
Year diagnosed with hypertension	<2 years	33	18	Chi-square test= 0.127	3	0.988
	2-5 years	21	10			
	5-10years	26	13			
	>10 years	29	16			
Family member with hypertension		62	32	Chi-square test= 0.008	1	0.927
	Yes					
	No	47	25			

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the findings of the study. The study sought to assess adherence to self-care practice and associated factors among patients who are diagnosed with hypertension and visiting medical outpatient clinic at Kenyatta National Hospital.

5.2 Discussion

In this study, good knowledge was associated with increased likelihood of good self-care practice. In addition, 37.3% of the patients who were diagnosed with hypertension had good level of knowledge on hypertension. This finding is lower compared to a study conducted in Ethiopia which showed 43.6% (Adam et al., 2021). This variation could be due to the difference in sociodemographic characteristics of the patients diagnosed with hypertension and the study setting. According to a study conducted in Ethiopia, hypertensive patients who had high understanding of their condition, treatment, complications and how it can be controlled and managed were four times more probable to perform self-care compared to less knowledgeable patients (Adam et al., 2021).

In this study, 34.7% of the hypertensive patients had good adherence to self-care practice towards hypertension determined from the six domains of self-care practice which promoted good control of blood pressure. This finding is higher than a study done in Ethiopia which showed 29% (Shegaw et al., 2020). This variation might be due to the fact that majority of the patients had good knowledge on hypertension and a large number of the study participants residing in urban areas which provides easy accessibility to health facility as well as information. It can also be due to the study setting.

This study revealed that 92.7% of the patients were non-smokers which was consistent with the results of a study conducted in Ethiopia which was 93%. However, the

findings were higher than a study done in another part of Ethiopia that had 81%. Shegaw et al. (2020). This could be due to the difference in sociodemographic characteristics and societal beliefs towards smoking.

In this study, 27.3% of the hypertensive patients had good adherence to physical activity. This study proportion was lower compared to a study done in Uganda that showed that 63.1% had good adherence to physical activity (Ademe et al., 2020). The difference could be explained by methodological differences especially the difference in instruments used to assess the level of physical activity. For instance, in this study, yes or no questions were used whereas other study used items on a Likert-type scale to measure the level of physical activity. Another difference could be in the study population in which less than half of the study participants were from rural area where individuals have better engagement in physical activity during daily activities such as farming. Majority of the study participants were urban dwellers with inadequate space and access to gyms, parks and walking trails.

This study revealed that only 15.1% of the hypertensive patients had good adherence to low salt diet. This finding was lower compared to a study conducted in Ethiopia which showed 82% (Hussen et al., 2020). The possible explanation for this discrepancy could be the difference in socioeconomic status and the dietary habits of the patients. The American College of Cardiology 2017 guidelines for the treatment and prevention of hypertension recommended that daily intake of salt during food preparation and avoidance or limitation of consumption of salty foods may be beneficial for both in the reduction of mortality and morbidity in hypertensive patients (AHA 2017)

In this study, 86.5 % of the hypertensive patients had good medication adherence. This finding is higher than a study conducted in Uganda which revealed 79.5% (Ademe et al., 2022). In another study conducted in Ethiopia, only 69.2% of the study participants had good adherence to medication. This may be attributed to the difference in patients' self-care awareness about hypertension and accessibility to information and health services in predominantly tertiary hospitals like KNH. According to Hussen et al. (2020), hypertensive patients who had been educated by their physicians and other

health care providers were more adherent to treatment since they had a better understanding of the disease nature, management and complications.

The study revealed that 30.9% of the hypertensive patients had good adherence to weight management. This finding was much lower than study conducted in Ethiopia which was 74.8% (Hussen et al., 2020). This could be due to the difference in socioeconomic status and lifestyle.

This study revealed 57.8% of the hypertensive patients had good adherence to alcohol moderation. This finding was lower compared to a study conducted in Ethiopia which revealed 79.8% Adam et al. (2021). This could be due to difference in cultural and religious influence in which alcohol consumption is illegal and immoral. The American College of Cardiology recommend that daily alcohol intake should not exceed 2 drinks per day for men and one drink per day for women. Therefore, reducing alcohol intake is important to decrease the burden of hypertension. AHA (2019).

Similarly, only 15.1% of participants adhered to a low-salt diet, a proportion drastically lower than the 82% reported in an Ethiopian study. This discrepancy may reflect differences in dietary habits, awareness, and socioeconomic status. In Kenya, high salt consumption is often driven by traditional food preparation practices, reliance on processed foods, and limited access to healthier alternatives in urban informal settlements. The American College of Cardiology 2017 guidelines emphasise that dietary salt reduction is essential for controlling blood pressure and minimising cardiovascular risks, reinforcing the need for dietary education in hypertension management programs.

Additionally, 57.6% of participants adhered to alcohol moderation, and 30.9% practised weight control, indicating moderate adherence in these areas. These behaviours may be influenced by individual awareness, cultural norms, and family support, although further qualitative studies are needed to explore these dimensions. A key finding in this study was the statistically significant association between hypertension knowledge and adherence to self-care. Participants with good knowledge were over three times more likely to adhere to self-care recommendations than those

with poor knowledge (OR = 3.20, 95% CI: 1.64–6.24, $p = 0.001$). This association remained strong even after adjusting for confounding variables such as age, education, and income. Similar findings have been reported in Ethiopia, where patients with a good understanding of their condition, treatment, and potential complications were four times more likely to engage in self-care practices. However, it is concerning that only 37.3% of respondents in this study had good knowledge of hypertension, despite receiving care at a national referral facility.

Interestingly, none of the assessed sociodemographic factors, such as age, gender, income level, education, or residence, were significantly associated with adherence to self-care practices. While some studies have reported associations between these factors and adherence, the findings in this study suggest that personal knowledge and behaviour change may have a stronger influence than structural or demographic characteristics. This implies that interventions focusing solely on population characteristics may be less effective than those that enhance patient understanding and empowerment.

This study revealed that there was no statistically significant association between self-care practices and sociodemographic characteristics of the patients diagnosed with hypertension. This is contrary to a study done in Ethiopia which showed that sex, education status, occupational status and knowledge about hypertension were significantly associated with good self-care practice while age, marital status and religion were not significant at $p < 0.05$. (Hussen et al., 2020. This finding may be due to the study area, Kenyatta National Hospital being a level six health facility where patients are mostly referred for specialized health care services. This may need further studies to determine any association.

5.3 Conclusion

- i. The level of knowledge on hypertension among the study participants was very low at 37.3% considering that it influences positive behavior change which eventually promotes blood pressure control and minimize complications that may arise.

- ii. This study revealed that level of adherence to self-care practice was low at 34.7%. Based on the analysis of the six domains, adherence to nonsmoking was the highest at 92.7%, adherence to medication at 86.5%, adherence to alcohol moderation at 57.8%, adherence to weight management at 30.9%, adherence to physical activity at 27.3% and adherence to low salt diet was the least at 15. % .
- iii. It was observed that there was no association between self-care practice and sociodemographic characteristics. However, good knowledge was associated with 3.2 times higher likelihood of good adherence to self-care practice

5.4 Recommendations

- i. The public health facilities including Kenyatta National Hospital should strengthen their efforts in providing targeted education programs to patients and family members on hypertension, management and complications. This can be done by availing health information material such as brochures, having a session of health talk as patients wait to be reviewed by a doctor and also electronically via television screens at the waiting area. This will promote a better understanding of the condition, improve adherence to management leading to better control of blood pressure as well as prevent complications of hypertension.
- ii. More emphasis is needed in adherence to all components of self-care practices for patients with hypertension and their family members especially regarding dietary modifications and regular physical activity. This can be achieved through teamwork among relevant stakeholders.
- iii. There is a need to recruit a counsellor to compliment the staff working in medical outpatient clinic in KNH whose core mandate will be to provide support to those patients who have a challenge in adhering to the hypertension management.
- iv. Regular check-up and follow-up of patients' compliance with self-management protocol should be given to identify factors that potentially hinder the patients 'adherence to hypertension self-care protocols.

- v. The policy makers in KNH as well as County and National government of Kenya need to consider strengthening the current non-communicable disease control programs including hypertension by focusing on effective coordination of the implementation of existing policies and strategies aimed at reducing the main causes of non-communicable diseases such as tobacco use, unhealthy diet, inactivity and harmful use of alcohol.

5.4 Suggestions for Further Research

This study contributes to the understanding of adherence to self-care practices and associated factors among hypertensive patients attending the Medical Outpatient Clinic at Kenyatta National Hospital. Nonetheless, the study had certain limitations that suggest directions for further research. First, since the study was conducted at a single tertiary facility Kenyatta National Hospital the findings may not fully represent self-care practices among hypertensive patients in other healthcare settings across Kenya, especially rural and primary healthcare facilities. It is therefore recommended that similar studies should be conducted in county referral hospitals and lower-tier health facilities to allow for comparative analysis and broader generalizability of findings.

Second, the study relied on self-reported adherence to self-care practices, which may be subject to social desirability bias and recall bias. Future research should consider longitudinal designs or incorporate biometric or clinical indicators such as blood pressure trends, salt intake biomarkers, and exercise trackers to validate self-care behaviors more objectively.

Third, while this study found no statistically significant association between sociodemographic characteristics and adherence to self-care practices, other studies have indicated otherwise. Future studies should therefore explore this relationship in greater detail using a larger sample size, more diverse population, or multi-center design to examine whether and how factors such as income, education, occupation, and urban-rural differences influence adherence.

Finally, in-depth qualitative studies is suggested to explore personal, cultural, and systemic barriers to self-care practice adherence among hypertensive patients. Such studies would help illuminate underlying motivations, perceptions, and challenges that cannot be fully captured through structured questionnaires.

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APPENDICES

Appendix I: Questionnaire

QUESTIONNAIRE ON ADHERENCE TO SELF-CARE PRACTICES AND ASSOCIATED FACTORS AMONG PATIENTS DIAGNOSED WITH HYPERTENSION VISITING MEDICAL OUTPATIENT CLINIC AT KENYATTA NATIONAL HOSPITAL.

The questionnaire tool has 3 main sections.

Section 1. Sociodemographic information

Section 2. Knowledge- related questions

Section 3. Self-care related questions

SECTION 1

Socio-demographic characteristics

1. What is your gender?

Male ☐

Female ☐

2 What is your age?

18-38 years ☐

39-59 years ☐

60-75 years ☐

3. Marital status

(i) Single ☐

(ii) Married ☐

(iii) Divorced ☐

(iv) Widowed ☐

4. What is your level of Education?

(i) Uneducated ☐

(ii) Primary education ☐

(iii) Secondary education ☐

(iv) College and above ☐

5. What is your occupation?

(i) H/wife ☐

(ii) Student ☐

(iii) Farmer ☐

(iv) Government employee ☐

(v) Business ☐

(vi) Non-Governmental Organization (NGO) ☐

(vii) Others.....

6. Where do you reside?

Urban ☐

Rural ☐

7. What is the range of your income?

(i) < ksh.5000 ☐

(ii) Ksh.5000-10000 ☐

(iii) >10000 ☐

8. How long ago were you diagnosed with hypertension?

(i) <2 years ☐

(ii) 2-5 years ☐

(iii) 5 – 10years ☐

(iv) >10years ☐

9. Do you have family members with HTN?

- Yes ☐

- No ☐

SECTION 2

General knowledge on hypertension

10. Do you have an idea of what hypertension is?

Yes ☐

No ☐

11. Can hypertension be controlled?

Yes ☐

No ☐

12. What do you think are the causes of hypertension? Circle all that apply.

(i) I don't know ☐

(ii) Alcohol ☐

(iii) Fat in the body ☐

(iv) High intake of salt ☐

(v) Irregular exercise ☐

(vi) Stress ☐

Lifestyle and medication management

Answer Yes or No.

13. Adherence to medication?

Yes ☐

No ☐

14. Adherence to diet?

Yes ☐

No ☐

15. Adherence to moderation of alcohol?

Yes ☐

No ☐

16. Adherence to exercise?

Yes ☐

No ☐

Measurement and treatment goals

17. An individual with hypertension should go for regular checkups?

Yes ☐

No ☐

18. How often do you check your blood pressure?

(i) Only when I come to clinic for checkup ☐

(ii) Once per week ☐

(iii) Once everyday ☐

(iv) Once every month ☐

19. Poor compliance to treatment can lead to serious complications of hypertension?

Yes ☐

No ☐

SECTION 3

Medication adherence

20. Do you take blood pressure medication every day for 7 days in a week?

Yes ☐

No ☐

21. Do you take Bp medication same time every day for 7 days

Yes ☐

No ☐

22. Do you take the recommended dosage of the antihypertensive medication?

Yes ☐

No ☐

Alcohol Drinking

23. On averagely how many days per week do you drink alcohol?

None

1 – 3 ☐

4 – 6 ☐

7 ☐

24. On a typical day that you drink alcohol, how many drinks do you have?

1 – 2 ☐

3 – 4 ☐

More than 4 ☐

25. What is the largest number of drinks that you have had on any given day within the last month?

1 – 2 ☐

3 – 5 ☐

More than 5 ☐

Smoking

26. How many cigarettes do you smoke in one day?

None ☐

1 – 2 ☐

3 – 5 ☐

>5 ☐

27. How many cigarettes do you smoke in one week?

(i) None ☐

(ii) < one packet ☐

(iii) One packet ☐

(iv) >One packet ☐

Physical Activity

28. How many of the past 7 days did you do at least 30 minutes total of physical activity with moderate intensity

1 – 2 days ☐

3 – 4 days ☐

5 days ☐

29. How many of the 7 days did you do a specific exercise activity (such as walking) other than what you do around the house or part of your work?

None ☐

1 – 2 days ☐

3 – 4 days ☐

>5 days ☐

Low – Salt Diet Adherence

30. Do you eat smoked meat?

Yes ☐

No ☐

31. When do you use salt in your food?

(i) Add salt to food on table ☐

(ii) Add salt to food when cooking food ☐

32. Taking too much salty foods is good for a hypertensive patient

Yes ☐

No ☐

33. Do you add salt on fruits before eating?

Yes ☐

No ☐

34. Do you like salty meat?

Yes ☐

No ☐

35. Adding more salt on table food makes the food more delicious

Yes ☐

No ☐

Weight Management

36. In the last 30 days, I have eaten plenty of fruits and vegetables because it helps in controlling weight ☐

Strongly agree ☐

Strongly disagree ☐

37. Eating smoked salty meat for 30 days helps in controlling weight

Strongly agree ☐

Strongly disagree ☐

38. Battered whole bread and smokies aid in controlling weight for the last 30 days

Agree ☐

Disagree ☐

39. Performing normal duties in the last 30 days is enough exercise

Strongly agree ☐

Strongly disagree ☐

40. Apart from normal Daily activities, it is important to engage in physical exercises at least 30 minutes for at least 5 days in a week

Agree ☐

Disagree ☐

41. Walking for at least 30 minutes every day is part of exercise and helps in controlling weight

Strongly agree ☐

Strongly disagree ☐

42. Eating more fatty foods helps in controlling weight

Agree ☐

Disagree ☐

43. Eating more vegetables and less meat daily helps in controlling body weight

Strongly agree ☐

Strongly disagree ☐

44. Failure to observe recommended exercises and diet maintains weight

Agree ☐

Disagree ☐

45. Daily exercises lead to weight gain

Strongly agree ☐

Strongly disagree ☐

Appendix II: Informed Consent in English

ADHERENCE TO SELF –CARE PRACTICES AND ASSOCIATED FACTORS AMONG PATIENTS DIAGNOSED WITH HYPERTENSIVE AND VISITING THE MEDICAL OUTPATIENT CLINIC AT KENYATTA NATIONAL HOSPITAL

(Informed Consent)

INFORMATION SHEET

Introduction

My name is Anne Adhiambo Opiyo of Jomo Kenyatta University of Agriculture and Technology. I am inviting you to be a participant in my research study titled “ADHERENCE TO SELF-CARE PRACTICES AND ASSOCIATED FACTORS AMONG PATIENTS DIAGNOSED WITH HYPERTENSION VISITING MEDICAL OUTPATIENT CLINIC AT KENYATTA NATIONAL HOSPITAL.” We want to establish the level of self-care practices and related factors among patients diagnosed with hypertension attending medical outpatient clinic at Kenyatta National Hospital.

Who qualifies for the study?

Patients aged between 18 years and 75 years diagnosed with hypertension, taking medications with at least six months of follow up in the medical outpatient clinic at Kenyatta National Hospital will qualify.

What is expected from participants?

To answer the study's objectives, you will be required to fill in a questionnaire or answer questions during this information.

Is my information confidential?

Yes, we maintain the confidentiality of our participants during and after the study. The data we collect will not include your name, ID number, phone number.

Will I be paid for being a participant?

No, participation in this study is voluntary.

What are the risks of participating?

None

What if I change my mind?

There will be no consequences. One can opt out at any time if you feel uncomfortable with the study.

Who can I contact if I have questions?

You can contact Anne Adhiambo Opiyo any time through her phone number...0725914560..... for clarification. You can also write to the UoN/KNH ERC at P.O Box 30197 – 00100 or call their offices through 54 721 257746, (020) 318262 Ext.28250 during working days for assistance.

CONSENT CERTIFICATE

I..... offer consent to participate in the study titled " ADHERENCE TO SELF –CARE PRACTICES AND ASSOCIATED FACTORS AMONGPATIENTS DIAGNOSED WITH HYPERTENSION AND VISITING THE MEDICAL OUTPATIENT CLINIC AT KENYATTA NATIONAL HOSPITAL " being conducted by Anne Adhiambo Opiyo. I have not been coerced into signing this form. All questions and or concerns have been answered satisfactorily before providing informed consent.

.....

Signature

Date

Name of the person administering consent

.....

.....

Signature

Date

Appendix III: Informed Consent in Kiswahili

ADHERENCE TO SELF-CARE PRACTICES AND ASSOCIATED FACTORS AMONG PATIENTS DIAGNOSED WITH HYPERTENSION AND VISITING MEDICAL OUTPATIENT CLINIC AT KENYATTA NATIONAL HOSPITAL

(Taarifa ya Idhini)

KARATASI YA HABARI

Utangulizi

Jina langu ni Anne Adhiambo Opiyo wa Chuo Kikuu cha Jomo Kenyatta. Ninakualika kuwa mshiriki katika utafiti wangu uliopewa jina la “KIWANGO CHA MAZOEZI YA KUJITUNZA KWA WAGONJWA WENYE SHINIKIZO LA DAMU KATIKA KLINIKI YA HOSPITALI YA TAIFA YA KENYATTA.” Tunataka kubaini kiwango cha mazoezi ya kujitunza kwa wagonjwa wenye shinikizo la damu katika kliniki ya hospitali ya taifa ya Kenya.

Nani anahitimu kwa ajili ya utafiti?

Wagonjwa wenye miaka kumi na nane hadi sabini na tano, wanaugua shinikisho ya damu na kumeza dawa, na hata kutembelea kliniki kulingana na maagizo ya daktari.

Nini kinatarajiwa kutoka kwa washiriki?

Utahitajika kujaza dodoso au kujibu maswali wakati wa taarifa hii.

Je, maelezo yangu ni ya siri?

Ndiyo, tunadumisha usiri wa washiriki wetu wakati na baada ya utafiti. Data tunayokusanya haitajumuisha jina lako, nambari ya kitambulisho, nambari ya simu.

Je, nitalipwa kwa kuwa mshiriki?

Hapana, ushiriki katika utafiti huu ni wa hiari.

Je, ni hatari gani za kushiriki?

Hatutarajii hatari yoyote mbaya kwa mshiriki.

Je, nikibadili mawazo yangu?

Hulazimiki kushiriki katika utafiti huu. Iwapo unahisi kutoridhika na utafiti huu basi unaweza kujiondoa wakati wowote.

Ninaweza kuwasiliana na nani nikiwa na maswali?

Unaweza kuwasiliana na Anne Adhiambo Opiyo wakati wowote kupitia nambari yake ya simu...0725914560..... kwa ufafanuzi. Unaweza pia kuandikia UoN/KNH ERC katika P.O Box 30197 – 00100 au upigie simu afisi zao kupitia +254 721 257746, (020) 318262 Ext.28250 wakati wa siku za kazi kwa usaidizi.

CHETI CHA RIDHAA

Mimi..... natoa idhini ya kushiriki katika utafiti huo wenye mada “KIWANGO CHA MAZOEZI YA KUJITUNZA KWA WAGONJWA WENYE SHINIKIZO LA DAMU KATIKA KLINIKA YA HOSPITALI YA TAIFA YA KENYATTA”

“ Sijalazimishwa kusaini fomu hii. Maswali na au hoja zote zimejibiwa kwa njia ya kuridhisha kabla ya kutoa kibali cha taarifa.

.....

Tarehe

Sahihi

Jina la mtu anayesimamia idhini

.....

Tarehe

Sahihi

Appendix IV: Ethical Approval


UNIVERSITY OF NAIROBI
FACULTY OF HEALTH SCIENCES
P.O. BOX 19676 Code 00202
Tel: 254 20 2720300 Fax: 254 20 2720300


KENYATTA NATIONAL HOSPITAL
P.O. BOX 20723 Code 00202
Tel: 726304-6
Fax: 725272
Telegrams: 88325UP, Nairobi

KNH-UoN ERC
Email: kenh_erc@kenh.ac.ke
Website: <http://www.knh.ac.ke>
Facebook: <https://www.facebook.com/kenh.erc>
Twitter: https://twitter.com/KNH_ERC

Ref: KNH-ERC/A/407

28th July, 2023

Anne Adhiambo Opiyo
Reg No. HSN 311-1154/2020
Dept. of Nursing
JKUAT

Dear Anne,



ETHICAL APPROVAL-RESEARCH PROPOSAL: ADHERENCE TO SELF-CARE PRACTICES AND ASSOCIATED FACTORS AMONG HYPERTENSIVE PATIENTS VISITING THE MEDICAL OUTPATIENT CLINIC AT KENYATTA NATIONAL HOSPITAL (P399/04/2023)

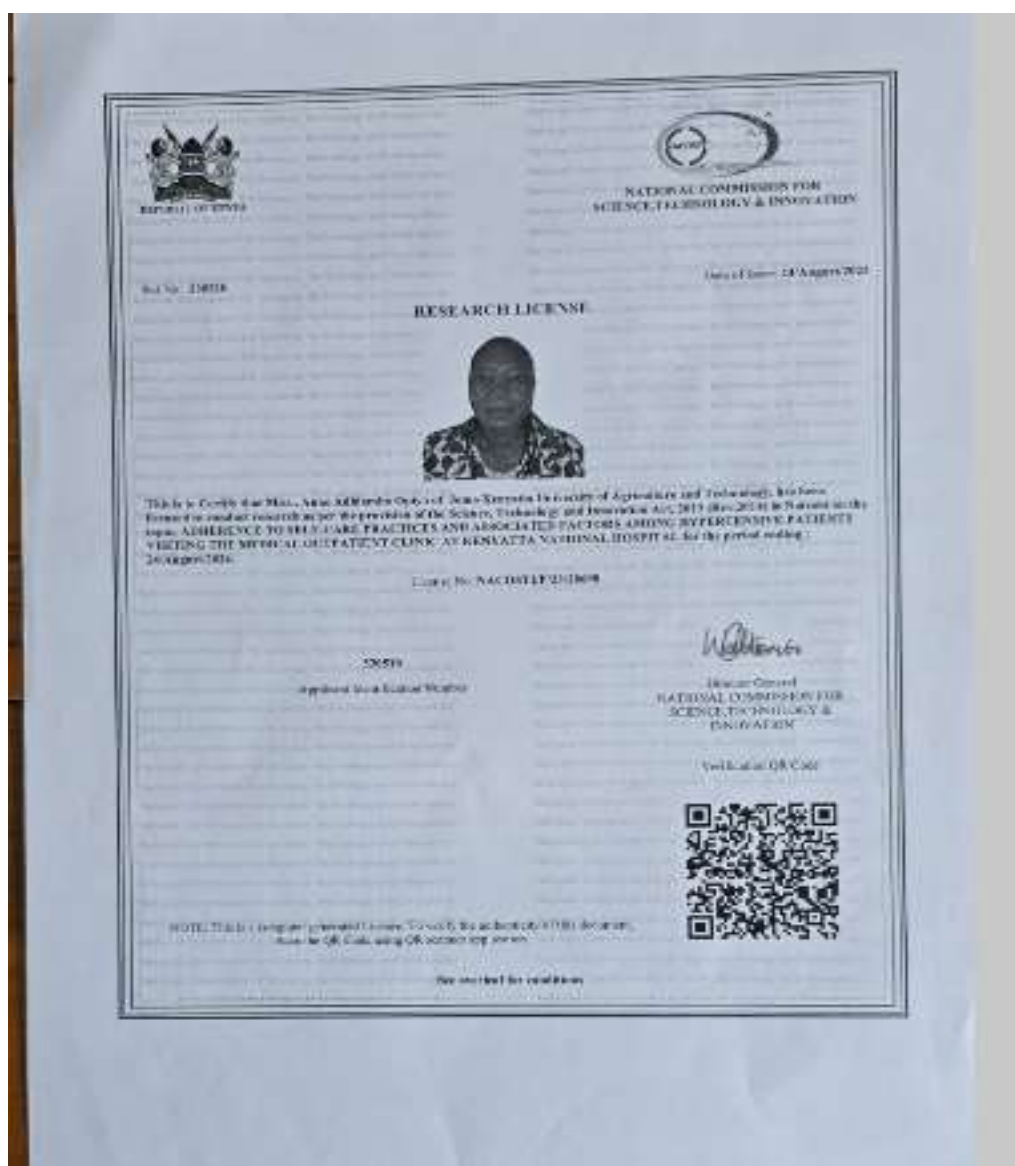
This is to inform you that KNH-UoN ERC has reviewed and approved your above research proposal. Your application approval number is P399/04/2023. The approval period is 28th July 2023 – 27th July 2024.

This approval is subject to compliance with the following requirements:

- Only approved documents including (informed consents, study instruments, MTA) will be used.
- All changes including (amendments, deviations, and violations) are submitted for review and approval by KNH-UoN ERC.
- Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KNH-UoN ERC 72 hours of notification.
- Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH-UoN ERC within 72 hours.
- Clearance for export of biological specimens must be obtained from relevant institutions.
- Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- Submission of an executive summary report within 90 days upon completion of the study to KNH-UoN ERC.

Picked to discover

Appendix V: NACOSTI License



Appendix VI: Approval from Kenyatta National Hospital

 KENYATTA NATIONAL HOSPITAL
P.O. BOX 20723, 00202 Nairobi
Tel.: 2726300/2726450/2726530
Fax: 2725772
Email: knhadmin@knh.or.ke

Ref: KNH/HOD-MED/37/VOL.II Date: 27 September 2023

Anne Adhiambo Odiyo
Reg. No HSN 111-1134/2020
Dept. of Nursing
School of Nursing
JKUAT

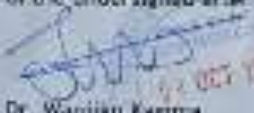
Dear Anne,

RE: APPROVAL TO CONDUCT A STUDY AT THE KNH MEDICINE DEPARTMENT

Following approval by the KNH/UCN-Ethics & Research Committee for your research proposal and subsequent filing of the study registration certificate, this is to inform you that authority has been granted to collect data in Medicine Department, on your study titled: *Adherence to self care practices and associated factors among hypertensive patients visiting the medical outpatient clinic at Kenyatta National Hospital.*

By a copy of this letter, ACH - ^{NCD}~~Diabetic~~ Centre is informed and requested to facilitate.

You will also be required to submit a report of your study findings to the office of the undersigned after completion of your study.


Dr. Wanjiku Kagame
HOD, MEDICINE
ACH - ~~Diabetic~~ Clinic

Kenya A world class patient centered health care system


KENYATTA NATIONAL HOSPITAL

Appendix VII: Registration Certificate

K.NH/REG/000001



KENYATTA NATIONAL HOSPITAL
P.O. Box 20/28-00202 Nairobi

Tel: 2726300/2726450/2726365
Research & Programs Ext. 44705
Fax: 2726272
Email: research@knh.org

Study Registration Certificate

1. Name of the Principal Investigator/Researcher
ANNE ANJAMBO OPIHO
2. Email address: anncsiga@gmail.com Tel No: 0725914560
3. Contact person (if different from PI) _____
4. Email address: _____ Tel No: _____
5. Study Title
Adherence to self care practices and associated factors among hypertensive patients visiting medical outpatient clinic at Kenyatta National Hospital
6. Department where the study will be conducted: Medicine - MOPC
(Please attach copy of Abstract)
7. Endorsed by Research Coordinator of Department where study will be conducted:
Name: _____ Signature: _____ Date: _____
8. Endorsed by KNH Head of Department where study will be conducted:
Name: Dr. Wanjiku Kogima Signature: [Signature] Date: 14 OCT 2023
29/9/2023
9. With Unit Ethics Research Committee approved study number: P299641223
(Please attach copy of ERC approval)
10. I, Anne Anjambo Opiho commit to submit a report of my study findings to the Department where the study will be conducted and to the Department of Medical Research.
Signature: [Signature] Date: 29/09/2023
11. Study Registration number: Dept/Number/Year: MOPC/2023/3732-23
(To be completed by Medical Research Department)
12. Research and Program Starts: _____

All studies conducted at Kenyatta National Hospital must be registered with the Department of Medical Research and investigators must consent to share results with the hospital.

Version 2: August, 2014