

**EXPLORING PATIENT EDUCATION EXPERIENCES AND PERCEIVED
INFLUENCING FACTORS AMONG ADULTS WITH HYPERTENSION IN
BOMET COUNTY'S PRIMARY CARE SETTING IN KENYA**

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**A Thesis Submitted to the Institute of Postgraduate Studies of Kabarak University
in Partial Fulfilment of the Requirements for the Award of Master of Medicine in
Family Medicine Degree**

KABARAK UNIVERSITY

NOVEMBER, 2025

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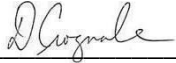
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RECOMMENDATIONS

To the Institute of Postgraduate Studies:

The thesis entitled “**Exploring Patient Education Experiences and Perceived Influencing Factors Among Adults with Hypertension in Bomet County’s Primary Care Setting in Kenya,**” written by **Murani Rwamba Carol**, is presented to the Institute of Postgraduate Studies of Kabarak University. We have reviewed the thesis and recommend it be accepted in partial fulfilment of the requirements for the award of the Master of Medicine in Family Medicine degree.

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DEDICATION

I dedicate this work to Almighty God, by whose strength and enablement it has been possible, and to the patients I serve, who, as the main drivers of their health, deserve accurate, patient-centred, and appropriate information regarding their health. I also dedicate it to my instructors and colleagues who continue to teach me the value of patient-centred communication, and to my husband and my family, who have supported me unwaveringly throughout this entire process.

ABSTRACT

Hypertension is the leading cause of cardiovascular disease and the third leading cause of preventable deaths globally. Its burden is rising rapidly in low- and middle-income countries, with African nations affected profoundly. Kenya is experiencing a significant increase in prevalence, with nearly one-third of its population having hypertension, yet only 12% achieve adequate control. Bomet County, a rural region in Kenya, mirrors the national prevalence. Poor adherence to both pharmacologic and non-pharmacologic treatment is a key contributor to poor blood pressure control. One primary reason for this is limited patient knowledge about hypertension and its management. Effective patient education improves knowledge, is linked to better adherence, and independently improves health outcomes. Kenya's National Guidelines for Cardiovascular Disease Management identify patient education as a critical component of hypertension care, recommending that it be provided at every visit and that it cover lifestyle changes and medication adherence. It, however, remains unclear how consistently and effectively this is implemented in practice. Understanding patients' experiences is key to addressing potential gaps in patient education and improving hypertension care. This study aimed to explore the experiences of adult patients with hypertension in Bomet County regarding the education they receive, the sources and formats of that education, and their perceptions of the factors that influence effective patient education. It utilised a qualitative design, among adults aged 18–69 years diagnosed with hypertension at least three months prior. Participants were recruited through purposive sampling from primary care facilities and from clinics in referral centres. Data were collected through semi-structured interview guides for in-depth interviews, focus group discussions, and key informant interviews conducted between August and September 2025. Inductive coding was performed, and the data were analysed thematically using Dedoose. Five major themes were generated: Content and Quality of Education, Patient Perception and Adherence, Sources of Education, Interactions between Patients and Providers, and Patient Recommendations. Patients had varied experiences with the content, quality, and consistency of the education. Sources were formal (healthcare providers) who were strongly supported by community/informal sources (community health promoters and informal peer educators), either one-on-one or in community groups, and were influenced by multi-level factors, including patient, provider, community, and healthcare system factors. The findings suggest the need to develop appropriate, standardised, structured, easy-to-use educational tools and invest in community resources to enhance hypertension health education nationwide.

Keywords: *Hypertension, Cardiovascular Disease, Primary Care, Patient Education, Kenya*

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LIST OF ABBREVIATIONS AND ACRONYMS

AAFP	-American Association of Family Physicians
BP	- Blood Pressure
CHP	- Community Health Promoter
CVD	– Cardiovascular Disease
DALY	-Disability Adjusted Life Years
DASH	– Dietary Adjustments to Stop Hypertension
FGD	- Focus Group Discussions
HTN	- Hypertension
HIC	- High Income Countries
IHME	- Institute for Health Metrics and Evaluation
ISERC	- Institutional Scientific and Ethics Review Committee
KDHS	-Kenya Demographic Health Survey
KNBS	-Kenya National Bureau of Statistics
KNH	- Kenyatta National Hospital
KUREC	- Kabarak University Research and Ethics Committee
LMIC	- Low- and Middle-Income Countries
MmHg	- Millimetres of Mercury
MOH	- Ministry of Health
NACOSTI	- National Commission for Science, Technology and Innovation
NCD	- Non-Communicable Disease
PE	- Patient Education
SMBP	- Self-monitoring of Blood Pressure
TPE	- Therapeutic Patient Education

CONCEPTUAL AND OPERATIONAL DEFINITION OF TERMS

Hypertension (HTN)- Refers to persistently elevated systolic blood pressure greater than or equal to 140mmHg and/or persistently elevated diastolic blood pressure greater than or equal to 90mmHg among adults aged 18years and above. It also refers to individuals who are already taking antihypertensives, even if their blood pressure is currently controlled (MOH, 2024).

Patient Education- A planned and systematic process of teaching and learning that results in changes in knowledge, behaviours, skills, and attitudes, and enables patients to maintain or enhance their health status. The terms Therapeutic Patient Education and Patient Education are used interchangeably in this paper.

Primary care facilities: The term refers to level I-III facilities (i.e., community-level facilities such as dispensaries and health centres), as well as the outpatient sites of level IV-VI (referral facilities), where primary care is offered to patients living with hypertension, in addition to specialised care.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Cardiovascular disease (CVD) is a leading cause of morbidity & mortality worldwide, with most deaths (nearly 80%) occurring in low-and middle-income countries (LMICs) (Ferdinand, 2020; Pius et al., 2021). Hypertension (HTN) is the leading cause of cardiovascular disease worldwide and the third leading cause of preventable premature death globally. Hypertension is defined as persistently elevated systolic blood pressure (BP) greater than or equal to 140mmHg and/or diastolic pressure greater than or equal to 90mmHg among subjects aged 18 years and above (MOH, 2024). It has also been defined as a condition in which blood pressure is elevated to a level at which clinical benefit is obtained from blood pressure lowering (Das et al., 2020).

The burden of HTN is increasing significantly in low- and middle-income countries, with the highest prevalence among adults aged 35 years and above in African countries (46%), compared with 35% in High-Income countries (HIC) (Ferdinand, 2020). Hypertension remains a significant health challenge in Kenya, with studies showing between 24.5% and 28.6% of adults affected, rising sharply to 58% among those aged 60-69 years. Yet despite this high prevalence, less than half (29.6-45.9%) are aware, and even fewer (6.5-15.6%) are on treatment, with only 12.5% of patients living with hypertension being well controlled (Mbau et al., 2024; Pengpid & Peltzer, 2020), and, according to Mohammed et al., (2018), only 51.7% of those aware and on treatment achieving reasonable blood pressure control. Other facility- based research also underscores this: in outpatient clinics across Kenya, nearly half of adults with hypertension reported not knowing they had high blood pressure (Shah et al., 2025). This continuum, from low awareness to diagnosis, and then to adherence, underscores the

importance of patient education as a strategic entry point, both to support those already diagnosed in managing their condition, and to strengthen broader public health efforts in early detection and control (Mohammed et al., 2018; Pengpid & Peltzer, 2020).

Both rural and urban regions in LMICs, Kenya included, have a similar distribution of hypertension due to an increase in unhealthy diet, lack of exercise, and environmental exposures (Ferdinand, 2020; Pengpid & Peltzer, 2020). According to the Institute for Health Metrics and Evaluation, Bomet County had a population of 885,900 in 2021, with a life expectancy of 70 years among females and 65 years among males. Stroke was the 4th most common cause of death in the county, and ischemic heart disease was the 8th leading cause of death, both common sequelae of hypertension. Hypertension itself ranked 5th among the risk factors that drive death and disability in the country (IHME, 2021). HTN leads to early death and significant disability through strokes, myocardial infarctions, and chronic kidney disease (Mills et al., 2020).

These concerning statistics highlight the importance of preventive strategies at multiple levels. Holistic health education plays a vital role in preventing chronic diseases such as hypertension, encompassing both primary prevention through risk reduction and lifestyle modification, and secondary prevention by supporting patients in managing existing conditions (Maccido, 2024). Within this framework, patient education on hypertension represents a key component of secondary prevention for cardiovascular diseases, as it equips individuals with the knowledge and skills to control blood pressure, adhere to treatment, and reduce the risk of complications.

Various studies have evaluated the role of health education in fostering reasonable blood pressure control. In 2019, Ongaga did a study at Kenyatta National Hospital (KNH) and found that treatment adherence improved among patients living with hypertension who

received health education. These findings highlight the need for health providers to increase efforts to provide patients with the appropriate information through education to help control the illness (Mohamed, 2018). These findings are in keeping with other studies done in the West showing the critical role that hypertension patient education plays in improving medication adherence, lifestyle modification, and, consequently, blood pressure control among patients with hypertension through enhancing knowledge of the disease and its management (Goodfriend, 2020; Paczkowska et al., 2021).

Hypertension is a chronic illness necessitating continuous management with regular follow-up. Patients living with hypertension are primarily cared for in primary care settings comprising the community health units through community health promoters (CHPs) (level I), dispensaries (level II), health centres (level III), and referral primary healthcare facilities (sub-county, faith-based, or private facilities (level IV). They also receive care in County (level V) and National Teaching & Referral (level VI) facilities, which provide both primary and tertiary care for complications of the illness (MOH, 2024).

Ayodapo et al. (2018), in a cross-sectional study examining the relationship between patients' knowledge of hypertension and medication adherence in a tertiary facility in Nigeria, found that most patients had limited knowledge of the disease and its management. However, those with a good understanding of hypertension had statistically significantly higher adherence to treatment than those with poor hypertension knowledge, regardless of their socioeconomic status or level of education. This was thought to be because primary care physicians provided information to all patients living with hypertension, demonstrating the vital role of primary care providers in hypertension patient education.

Patient education is a planned and systematic process of teaching and learning that results in changes in knowledge, behaviours, skills, and attitudes and enables patients to maintain or enhance their health status (AAFP, 2000). In a 2nd-order meta-analysis, Simonsmeier et al. (2021) found that patient education was effective in maintaining or enhancing health for patients with circulatory diseases (among other conditions), reducing medication use and medical facility visits, and having positive effects on health, psychological & physical functioning. It is a cost-effective way to manage patients with chronic conditions and improve their outcomes, and it requires the active participation of both patients and providers (Simonsmeier et al., 2021; WHO, 2023).

Ngai et al. (2019), in assessing nutrition knowledge, attitudes, and practices among patients living with hypertension in Tharaka Nithi, found that most patients had average nutrition knowledge regarding HTN, with more than a quarter unaware that good nutrition knowledge was relevant to its management. Pengpid & Peltzer (2020) found poor control among patients with hypertension in Kenya, which may be linked to an inadequate understanding of hypertension. There is a need to investigate patient education among patients living with hypertension as a significant contributing factor to their outcomes to identify areas for improvement. In this qualitative study, the researcher explores the experiences of adult patients living with hypertension regarding patient education and their perceptions of factors contributing to and the presumed benefits of patient education in this population.

1.2 Statement of the Problem

Africa has seen the highest rise in hypertension globally since 1990, with behavioural factors related to urbanisation, stress, poor access to healthcare, and ageing being the main drivers of this rise. Kenya has not been spared, with ischemic heart disease and stroke becoming the leading causes of non-communicable disease (NCD)-related death.

The highest age-standardised disability-adjusted life years (DALYs) due to hypertensive heart disease (HHD) were recorded in Africa. HTN is the most critical risk factor for CVD-related deaths due to ischemic heart disease, hypertensive heart disease, and stroke (Minja et al., 2022; Oguta, 2024). This poses a significant economic strain on populations already struggling financially, including in Kenya (Mucheru, 2021).

Bomet County faces a similar burden of hypertension, as well as a high prevalence of strokes and ischemic heart disease, both common HTN sequelae, and this is complicated by having the lowest health facility density in the country (IHME,2021; WHO, 2023). This calls for cost-effective means to achieve blood pressure control (Minja et al. 2022). Patient education is a key, cost-effective strategy to improve blood pressure control. It can be delivered in a variety of ways, including face-to-face in the clinic, group education, telehealth services, and print media (WHO, 2023).

Patients diagnosed with hypertension demonstrate insufficient knowledge of what normal blood pressure is, what appropriate management of the disease entails, and of the disease complications, affecting their management and contributing to poor outcomes from the disease (Ngai et. al, 2019; Kibore et al., 2020). There are limited studies in Kenya exploring the health education experiences of patients living with hypertension and the factors affecting patient education, and, despite national recommendations, the implementation of patient education in practice remains uncertain. This study explores patients' experiences and perceptions of factors influencing HTN patient education in primary care settings in Bomet County. The findings will help improve patient education at health facilities and the community level, thereby increasing the overall quality of care for patients with hypertension in Kenya and reducing morbidity and associated mortality.

1.3 Objectives of the Study

1.3.1 General Objective

To explore the lived experiences of adults with hypertension regarding patient education and their perspectives on influencing factors in Bomet County's primary care settings, Kenya.

1.3.2 Specific Objectives

- i. To explore patients' lived experiences of hypertension education in primary care settings in Bomet County, Kenya.
- ii. To describe the sources and formats of hypertension education delivered in Bomet County's primary care settings.
- iii. To understand the perspectives of adult patients living with hypertension on the factors that influence patient education in Bomet County's primary care settings.

1.4 Research Questions

- i. What are the lived experiences of adult patients living with hypertension regarding health education in Bomet County's primary care settings?
- ii. Which education sources and formats do adult patients living with hypertension encounter in Bomet County's primary care settings?
- iii. What factors do patients identify as shaping their hypertension education in Bomet County's primary care settings?

1.5 Justification for the Study

Patient education is a crucial aspect of chronic disease prevention and management, including hypertension (Maccido, 2024; Simonsmeier et al., 2022). In Kenya, the growing prevalence of hypertension coupled with poor blood pressure control (Pengpid & Peltzer, 2020) makes self-management essential. Through education, patients can

acquire the knowledge and skills needed to adhere to treatment and make lifestyle changes, which support better blood pressure control and improved clinical outcomes (WHO, 2023). Moreover, exploring patient experiences offers a valuable way to assess the quality of care and identify how educational strategies may fall short, enabling more patient-centred interventions (LaVela & Gallan, 2014).

At the same time, there is a broader community-level gap in awareness and understanding of hypertension, which undermines both early diagnosis and effective management. By documenting how patients perceive and experience education in primary care, this study can inform interventions that extend beyond health facilities, helping stakeholders develop educational programs tailored for both community settings and health facilities. Such insight is critical for designing strategies that are equitable, context-appropriate, and capable of reducing hypertension morbidity and mortality in our population.

1.6 Significance of the Study

This study sought to comprehensively explore the experiences of adult patients living with hypertension and their perspectives on the factors that influence hypertension patient education in the primary care setting, both supporting and hindering. It also aimed to understand what they are taught and from what sources (i.e., health care providers, community, media), as well as the enhancing and barrier factors. The findings will be channelled to various stakeholders (healthcare providers, the Ministry of Health, Bomet County Government, healthcare facilities, the Kenya Cardiac Society, and other relevant stakeholders). They will be beneficial in guiding approaches to patient education for hypertension and other chronic illnesses, to improve the quality of care patients living with hypertension receive and disease outcomes.

1.7 Scope of the Study

This study focuses on what patients with hypertension experience regarding health education related to their condition, and perceived factors affecting patient education. It included adult patients with a hypertension diagnosis for at least 3 months in the primary care setting in Bomet Central sub-county, Bomet County, with representation from a dispensary, a health centre, a sub-county outpatient clinic, and a faith-based referral hospital to capture a range of patient experiences. It took place from August to September 2025, following ethical approval. It utilised qualitative interviews that were conducted and analysed thematically by the primary researcher with the aid of a research assistant.

1.8 Assumptions of the Study

The researcher assumed that patients with hypertension would be willing to share their experiences with the patient education they had received, as well as the perceived facilitators and barriers to it.

1.9 Limitations of the Study

Being a qualitative study, it was subject to recall and reporting bias due to respondents' self-reporting. It may also have been subject to response bias. Respondents may have opted to share only information they considered socially acceptable. The researcher ensured participants' confidentiality to allay any fears they may have about sharing their experiences. Focus-group discussions were also used to foster group support, enable participants to share their views more freely, and trigger recall of experiences. To ensure respondents understood the questions and answered them correctly, the interview guides were reviewed by supervisors and piloted. The researcher kept a reflexive journal and reflected on their own biases throughout the study process to avoid these influencing the findings.

This research was conducted among patients only, as it was a phenomenological study that could explore only one population, and did not include providers, who would have provided an additional perspective on the subject.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a literature review comprising a theoretical review, an empirical review of prior studies, a summary of the literature, and research gaps.

2.2 Theoretical Review

This review examines a theory of behaviour change, from which the study's theoretical and conceptual framework is derived.

2.2.1 Social Ecological Model (SEM)

The SEM was derived from the Ecological Systems Theory that was developed by Urie Bronfenbrenner, a government advisor in the United States of America, and published in 1979. The theory was initially used in education and takes a holistic approach to educational interventions. It emphasises that behaviour is influenced by both the individual and the environment, and that it consists of person-focused and environment-focused interventions to promote health.

The 'ecology' is the interrelationship between factors at various levels, i.e., intrapersonal, interpersonal, primary groups, institutional, community & public policy factors. The ecological systems comprise: Interpersonal microsystems, organisational or institutional-level mesosystems, community-level exosystems, and cultural macrosystems. The intrapersonal level includes such things as knowledge, attitude, motivation; the Interpersonal level involves relationships between patients and their providers or peers; the Organisational level comprises the practices and structure of education in health facilities; the Community encompasses cultural norms and outreaches; and public policy the systemic and economic enablers and constraints (Glanz et al., 2015; Raingruber,

2014). This model is comprehensive, considers the various factors involved in human behaviour change, and is beneficial for designing health promotion programs that benefit people at the individual and community levels. It is therefore considered a meta-model as various models/theories of behaviour change can fit into it (Glanz et al., 2015; Raingruber, 2014).

The parts of these 'ecological systems' are interrelated and influence each other, and all-important aspects that should be targeted by the health intervention for it to be successful. According to the theory, the individual's attempts at behaviour change are more likely to succeed in a supportive environment, and behaviour is influenced by activities that repeatedly occur within social, institutional, and cultural environments. Health promotion programs should therefore target personal behaviours, social roles, and situational conditions to achieve behaviour change (Glanz, 2015; Raingruber, 2014).

Regarding hypertension patient education, this model can be applied to evaluate the various factors that influence patient education, both at the patient and environmental levels. The ecological level includes the community and the health facilities where the patient is cared for. Bamuya et al. (2021) used SEM to explore factors influencing the implementation of a structured diabetes education programme introduced in Mozambique and Malawi. In this qualitative study, involving patients, providers, and stakeholders, in-depth interviews and focus group discussions were utilised to identify the multifaceted factors influencing the implementation of structured diabetes programmes in the two LMICs. These factors all need to be addressed to strengthen educational interventions.

This study utilised the SEM as a theoretical framework to examine the factors influencing patient education for patients living with hypertension and to contribute to

the anticipated themes identified in the interview guide. As seen above, the merits of this model lie in its consideration of all factors that affect a specific intervention, in this case, patient education for patients living with hypertension and their experience of it. The derived data are therefore valuable for all parties involved in enhancing this crucial aspect of care, from providers to health policymakers. The demerit is that it doesn't help identify the most significant influences and may not guide priority areas when acting on the collected data (Golden & Earp, 2012).

This study focused on patients' experiences and perceptions of the influencing factors in their health education, rather than a quantitative study aimed at identifying the most influential factors. Due to its scope, it captures only influencing factors from the patients' perspective, not from providers' perspectives; hence, other aspects may not have been captured. Those seeking to use the findings to improve patient education among patients living with hypertension can target at least two ecological levels to begin with. (Golden & Earp, 2012). The SEM was utilised to identify influencing factors for patient education, while a phenomenological approach was taken to explore their experiences of the education.

2.3 Empiric Review

This section presents an empirical literature review of patient education for persons living with hypertension, highlighting the need for it, the interventions implemented, patients' experiences, and the influencing factors.

2.3.1 The Burden of Hypertension

Over the past three decades (1990–2019), cardiovascular diseases (CVDs) have risen exponentially to become the leading cause of global mortality and disability, accounting for 32% of all deaths worldwide (World Health Organisation [WHO], 2021). Low- and

middle-income countries (LMICs) have borne the highest burden, with CVD mortality rates increasing exponentially, by 50%, unlike high-income countries that have seen a decline during the same period (Minja et al., 2022). LMICs now face a double disease burden, as non-communicable diseases (NCDs), particularly CVDs, are projected to surpass communicable diseases in prevalence in the next decade. This transition is most acute in sub-Saharan Africa, where CVD-related deaths have gone from the 6th to the 2nd leading cause of death since 1990, with the steepest increases observed in Eastern and Western Africa (Minja et al., 2022).

This scenario is mirrored in Kenya, which is also experiencing an epidemiological transition marked by a rise in NCDs, which account for 50% of hospitalisations and 55% of hospital deaths, alongside continued and resurgent communicable diseases, creating a double disease burden (Kenya STEPwise Survey, 2015). Of the NCDs, CVD accounts for 25% of hospital admissions and 13% of deaths, with HTN being the most significant risk factor and the main driver for CVD (strokes, ischemic & hypertensive heart disease). Significant morbidity also arises from hypertensive emergencies and hypertensive renal disease (Ministry of Health [MOH] 2023; Minja et al., 2023; Oguta et al., 2024).

National prevalence studies in Kenya reveal similar prevalence with poor control. Mohamed et al. (2018) utilised data from the 2015 Kenya STEPs survey, which was a national cross-sectional household survey, to determine hypertension prevalence in Kenya. The survey collected data in all 47 counties of Kenya, targeting persons in both rural & urban areas, with an even distribution across gender, with 4433 participants, and determined the age-standardised prevalence from this sample. The findings were that a quarter of Kenyans aged 18-69 years had hypertension (24.5%), with only 15.6% aware and less than a third (26.9%) of those aware, on treatment. About half (51.7%) of those on treatment were well controlled, which is an even smaller percentage of all persons

living with hypertension being well controlled. Pengpid & Peltzer (2020) found similar results using data from the cross-sectional Kenya STEPwise survey sample of 4500 persons with uniform sex distribution and rural-urban residence. Based on this survey, 28.6% of adults had hypertension, slightly higher than the 26.7% reported in the Mohamed et al. (2018) survey. About a third (29.6%) were aware, and only 6.5% were on treatment, and 12.5% were controlled.

Mbau et al. (2024) conducted a similar survey across 7 counties in Kenya during the May Measurement Month (MMM), surveying 9738 individuals, of whom 28% had hypertension, a figure identical to that in prior national surveys. They, however, found much better awareness (45.9%), treatment (42%), and control (50%) rates. All these surveys reveal that our national prevalence is similar to that in the region and globally, necessitating increased efforts to prevent and control hypertension.

Bomet County is located in Kenya's Rift Valley region, where hypertension prevalence was 24.9%, closely matching the national average of 24.5% in the 2015 Kenya STEPwise survey (Gatimu & John, 2020). Rural areas, in particular, have been identified as areas of increasing hypertension burden in a national study conducted by the Kenya Cardiac Society, which included Bomet County among the sites. Among all participants, 26.1% were found to have hypertension, and only 31.5% of these individuals were on antihypertensive medications (Ogola et al., 2021). The Institute of Health Metrics and Evaluation (IHME) ranked HTN as the 5th most common cause of death and disability combined, with stroke and ischemic heart disease, common complications of hypertension, ranking as the 6th and 10th most common causes of mortality in Bomet county (IHME, 2021).

Although county-specific prevalence estimates remain limited in this understudied region, the 2022 Kenya Demographic and Health Survey (KDHS) reported that among women in Bomet who had been diagnosed with hypertension, only 18.5% were taking medication- one of the lowest treatment rates recorded nationally (Kenya National Bureau of Statistics [KNBS], 2022). Given the combination of regional burden, low treatment uptake, and the absence of locally focused educational interventions, Bomet County represents an underserved, high-priority setting for this study, with the findings providing essential context-specific evidence to inform future hypertension education and management strategies in rural Kenya.

Furthermore, the rise in HTN and other NCDs has placed significant financial strain on families, communities, and local and national governments. Mucheru (2021), in a systematic review of the impact of NCDs in Kenya, notes that families have to divert resources for daily living to manage the condition or sell assets to offset hospital bills, especially those related to complications arising from HTN. Additionally, communities organise fundraising events to support affected families. Local governments and the national government are also channelling resources to prevent, control, and deal with complications arising from HTN & other NCDs.

Additionally, individuals affected by hypertension are either less productive or have a shortened life expectancy from the complications of the disease, and are not able to play their part in providing for their families or contributing to the country's development. Mucheru et al. (2021) also argue that NCDs such as HTN are associated with a higher prevalence of depression, which further reduces patients' productivity, carries an increased risk of mortality, and is associated with increased cost of care to manage it. This results in straining an already strained economy and derailing development (Mucheru, 2021).

2.3.2 Hypertension Patient Education

According to the Kenya National Guidelines for the Management of Cardiovascular Diseases, patient education should be offered at every clinic visit. The guidelines stipulate that patient education should include advice on avoiding alcohol and tobacco, engaging in daily adequate physical activity, and adopting a healthy diet, including a Dietary Approaches to Stop Hypertension (DASH) diet (MOH, 2024). This is in keeping with other international guidelines that describe similar non-pharmacologic measures as a key part of hypertension management. For example, the European Society of Hypertension guidelines emphasise the importance of these interventions for preventing and lowering blood pressure, as well as for reducing CVD morbidity and mortality (Mancia et al., 2023). Consistent with these international guidelines, the Kenyan guidelines stipulate that management of those with low cardiovascular risk should begin with non-pharmacologic therapy via lifestyle modification for 3-6 months before initiating pharmacologic treatment, to reduce CVD morbidity and mortality, and thereafter to reduce pill burden.

Furthermore, the guidelines also list patient empowerment-based counselling as an essential consideration for those with poor control (MOH, 2024), which resonates with the European Society of Cardiology Guidelines on Cardiovascular Disease Management that advocate for communication strategies such as motivational interviewing and involvement of family members in the patient-physician communication (Visseren et al., 2021). Collectively, these guidelines highlight a shared emphasis on addressing modifiable risk factors through sustained lifestyle change and patient-centred communication as integral components of effective hypertension management.

The above strategies are achieved effectively through patient education. This study adopts the American Association of Family Physicians' definition of patient education: a

planned and systematic process of influencing patient behaviour through teaching and learning, to produce a change in knowledge, attitudes, and skills necessary to maintain or improve health. (American Association of Family Physicians, 2000). European literature further supports the view that patient education is a sequential, logical process provided to patients and clients in the clinical setting (Simonsmeier et al., 2021). A recent term, Therapeutic Patient Education (TPE), extends this definition, referring to interventions by trained health professionals to improve clinical outcomes that support patients in self-managing their chronic conditions, with the support of carers or families. The process is structured and equips them with the tools necessary to manage their condition and prevent complications (WHO, 2023). By integrating these approaches, patient education in this study refers to patients' acquisition of knowledge and skills, as well as their active involvement in care.

Patients with chronic conditions like hypertension benefit greatly from patient education, as it helps them manage their illness independently. Since patients spend most of their time outside healthcare facilities, they need the knowledge and skills to address the medical, emotional, and daily-life aspects of their condition (WHO, 2023). In countries like Kenya, it is essential to ensure patient education is delivered effectively across the healthcare system. Primary care providers are well-positioned to lead this effort because they often follow patients over time and build trusting relationships, which can improve adherence and overall outcomes (AAFP, 2000; Simonsmeier, 2022). For education to be effective, it should be structured, integrated into routine care, and tailored to each patient, giving them the tools to prevent complications and maintain or improve their quality of life (WHO, 2023; Roussel & Frenay, 2023).

In Ethiopia, which has a similar prevalence and control of hypertension to Kenya, Debela et al. (2023) implemented a structured educational intervention for adults with poorly

controlled hypertension. The intervention, delivered by doctors and nurses, resulted in reductions in systolic and diastolic blood pressure, weight, and total cholesterol, demonstrating the benefits of patient education in hypertension management. This is relevant to the Kenyan context, where primary care is mainly provided by nurses, clinical officers, and medical officers (Mohamoud, 2022), as these providers are well placed to deliver effective patient education to patients with hypertension.

Simonsmeier (2022), in a second-order meta-analysis aiming to provide a comprehensive integration of existing literature on the effectiveness of patient education across different diseases, health outcomes, and interventions, analysed 40 meta-analyses using a quantitative approach. The findings were that the overall effect of patient education on health outcomes was statistically significant and positive across a wide range of diseases, including circulatory illnesses such as hypertension. The meta-analysis supported the premise that TPE is a cost-effective means of enhancing patient outcomes and should be incorporated into routine care. The review, however, did not analyse differences in the methods used for patient education or in patient characteristics; therefore, it did not provide insight into the effectiveness of different PE delivery methods across various populations. They also did not analyse qualitative studies, missing out on the rich data these may have provided on the impact of education on patients and their experiences with various educational interventions. This study delves into patients' lived experiences of schooling, offering rich insights that quantitative methods may not capture.

2.3.3 Patient Experiences Regarding Hypertension Education

Patients' experiences with hypertension education are central to understanding how to design and deliver educational interventions effectively. Evidence from multiple contexts indicates that there is significant variability in the way education is provided to patients

living with hypertension. In Colombia, Trigos-Carrillo et al. (2025) conducted phenomenological interviews with 40 older adults to explore their experiences of chronic disease education. The study highlighted that some patients received structured, detailed counselling from healthcare providers, while others experienced minimal guidance, with providers prioritising prescriptions over verbal education. Similarly, Touray et al. (2023) used qualitative interpretive methods to examine diet-related education among patients with diabetes and hypertension in The Gambia, reporting that patients often received one-off, generic advice at diagnosis that failed to account for their social, cultural, or financial contexts. These studies demonstrate that how education is delivered can vary widely, which likely affects patients' engagement and ability to adopt recommended lifestyle or medication practices.

According to the World Health Organisation (WHO, 2023)'s introductory guide to therapeutic patient education, disease-specific programmes are more effective than general programmes. In addition, the principles of adult learning need to be utilised in the design of health education programs to make them effective. Learning should be built on the individual's experiences and existing knowledge, as the patient should be respected for their experiences with the condition. There should be cooperation between the educator & learner, and the educator should assist the learner in assessing their learning needs and involve them in planning how the needs will be met, serving as a guide, in a non-paternalistic way. This is evident in Touray et al. (2023)'s Gambian study, where the paternalistic approach led to non-adherence to dietary counsel. Primary healthcare in Kenya likely faces similar challenges, which may be potential barriers to effective patient education.

The qualitative methodologies used in these studies yielded rich insights into patient perceptions, highlighting nuances that quantitative measures alone may overlook. Patient preferences and engagement are additional crucial aspects to consider when delivering health education. Systematic reviews and qualitative studies consistently show that patients value personalised, culturally sensitive communication that respects their prior knowledge and experiences (Jafaar et al., 2020; Xu et al., 2022). For example, Jafaar et al. (2020) conducted semi-structured interviews with adults attending NCD clinics in Malaysia and found that participants' preferences for provider cadre influenced engagement. Some patients preferred doctors for their perceived expertise, whereas others preferred nurses for their accessibility and ability to build rapport. These findings suggest that patient-centred approaches that consider preferences and learning styles are more likely to improve the effectiveness of educational interventions. The use of qualitative methodologies in these studies, through in-depth interviews and interpretive analyses, allowed researchers to capture these complex interactions, which would be difficult to detect with purely quantitative designs.

Collectively, these empirical findings indicate that patient experiences are an essential mediator of the effectiveness of patient education interventions. Positive experiences, characterised by interactive, culturally appropriate, and patient-centred approaches, enhance patients' understanding, motivation, and capacity to engage in self-management behaviours. Conversely, negative experiences, such as a lack of engagement, paternalistic communication, or impractical guidance, can reduce the uptake and effectiveness of educational interventions. Despite the growing evidence base, gaps remain, particularly in rural African settings and nurse-led primary care contexts, where most hypertension care in Kenya is delivered. Few studies have explored how patients in these settings experience education interventions. Addressing these gaps is essential, as

understanding patient experiences will inform the design and delivery of more effective patient education interventions, ultimately enhancing self-management, adherence, and clinical outcomes among patients living with hypertension.

2.3.4 Patient Education Sources and Formats

Hypertension education in primary care is delivered through a variety of sources and formats, and understanding these is essential to interpreting how patients engage with and benefit from these programmes. Evidence shows that education can be provided by a range of healthcare providers, including nurses, clinical officers, medical officers, pharmacists, and nutritionists (WHO, 2023). Collaboration among these providers is critical to ensure consistency and reinforcement of messages. This aligns with the situation in Kenya, where most patients living with hypertension receive care from generalist providers in health facilities, supported by nutritionists and community health promoters who provide follow-up and reinforcement at the community level (Mohamoud & Mash, 2023).

Correia et al. (2023), in a systematic review and meta-analysis, found that therapeutic patient education delivered by non-specialists can be just as effective as that provided by specialists across chronic diseases. Their review synthesised studies employing various methodologies, including randomised trials and observational designs, and showed improvements in biomedical measures, psychosocial outcomes, and overall quality of life. These benefits were attributed to increased patient knowledge, which supported better adherence and healthier lifestyle changes. Consistent with Barnason et al. (2017), Correia et al. also concluded that the effectiveness of TPE depended more on the intervention's dose or intensity (that is, frequency and continuity of contact) than on the specific teaching techniques used. These findings reinforce the potential of generalist-led

education models in settings like Kenya, where specialist-led hypertension education is limited.

Community-based education sources have also demonstrated substantial benefits. Khanal et al. (2021) conducted a community-based cluster-randomised trial in Nepal to assess the role of community health promoters among participants with uncontrolled hypertension. The intervention group, which received follow-up and community-level education reinforcement, showed significant reductions in both systolic and diastolic blood pressure and improved hypertension knowledge compared with standard facility-based care. This study highlights the importance of community-level reinforcement of facility-based education. It supports the growing role of community health volunteers in chronic disease management, an approach increasingly adopted in Kenya (Bwana, 2024).

Peer-led education has similarly shown promise. Ranjbar et al. (2024), in a randomised clinical trial among elderly patients with hypertension in Iran, found that peer education improved medication adherence more than standard provider-led sessions. The study also reported lower costs associated with peer-led activities. While the intervention focused on older adults, the underlying mechanism, patients learning from individuals with shared experiences, could be applicable across age groups, making peer models a potentially valuable supplement to formal education in primary care. This correlates with local data in Kenya, where a study assessing the impact of peer-led support groups in hypertension home-based care found that participants in the peer-led support groups were found to have significantly lower systolic blood pressures than those engaged only in home-based care, as the participants in the support-group arm were more involved in their care (Otieno et al., 2023).

Various formats of delivering education have been documented. Barnason et al. (2017) reviewed TPE interventions across cardiovascular diseases. They identified methods ranging from simple self-monitoring of blood pressure (SMBP) to SMBP combined with behavioural counselling, telephone follow-ups, medication titration, or tailored lifestyle advice. Nurse-led education, delivered face-to-face or remotely, was also widely featured. More complex interventions included culturally tailored lifestyle programmes, stage-of-change-based self-management education, Mediterranean diet counselling paired with ambulatory blood pressure monitoring, and strategies like self-affirmation to address motivational barriers. Team-based interventions such as self-management toolkits or motivational interviewing supported by peer follow-up were also reported.

Outcomes of these interventions varied. Many studies reported reductions in blood pressure, improved medication adherence, better diet and lifestyle practices, increased confidence in managing the condition, and reduced stress or depressive symptoms. Multi-component or telemedicine-supported programmes often produced more potent effects, likely because they allowed patients to apply learning in their own context with repeated support. Some interventions, however, showed little or no improvement in blood pressure or clinical outcomes despite increases in knowledge. Behaviour-focused programmes generally outperformed interventions that relied solely on self-monitoring. Several strategies were noted to enhance learning: visual aids, structured feedback, repetition of key messages, and teach-back approaches. While literacy-tailored interventions did not consistently outperform standard programmes, applying literacy-sensitive approaches universally ensures that all patients, including those in rural areas such as Bomet, can engage meaningfully with the education (Barnason et al., 2017; Simonsmeier et al., 2022; WHO, 2023).

2.3.5 Factors Affecting Patient Education (T)PE

Several factors have been shown to influence how patient education is delivered and received, and these often operate at the provider, patient, and broader health system levels. Across the literature, some factors appear to support effective education, while others consistently hinder it. Understanding these dynamics is essential for the present study, as patients' accounts of what helps or limits their learning in Bomet's primary care settings are shaped by the same processes described in broader contexts.

Several studies point to facilitators of practical education. In their ethnographic work, Roussel and Franey (2023) observed that many providers approached education with a clear intention to empower patients. They worked alongside patients to repeatedly demonstrate skills until patients felt confident performing them, which mirrors Hayek et al.'s (2025) finding that providers who value patient education and involve patients actively tend to deliver more effective sessions. Roussel and Franey (2023) also noted that some providers deliberately contextualised information to the patient's lifestyle and literacy level. This practice makes the education more applicable in daily life and can strengthen adherence. This emphasis on tailoring echoes earlier findings by Correia et al. (2023), who showed that the quality and appropriateness of delivery often matter more than who delivers the education.

Provider competence and preparation also appear central. In Roussel and Franey's study, educators who had undergone longer or more structured training were better able to support patient motivation and to use patients' values to guide the content of the session (Roussel & Franey, 2025). Hayek et al. (2025) similarly found that improved providers' skills and knowledge enhanced gradual and appropriate implementation of patient education. The importance of relationships also stood out across studies. Trust between

patients and providers created an enabling environment that promoted better patient education. This is important because patients need to feel they can engage, ask questions, and clarify concerns to better understand what they are being taught. Community-based work, such as that carried out by community health promoters in Kenya, demonstrates how close relationships and familiarity with the patient's home context can support ongoing education, thereby enhancing care received in facilities (Bwana, 2024).

Despite these facilitating factors, a range of barriers to effective education has also been documented. Several studies relate to how providers conceptualise their role. Roussel and Franey (2023) described instances in which education was delivered passively, with information presented in a theoretical manner, regardless of the patient's prior knowledge or interest. This resembles the paternalistic approach reported by Touray et al. (2023), which often leaves patients feeling disengaged and less likely to adhere. Inadequate provider understanding of TPE principles was also noted, aligning with Hayek et al.'s (2025) observation that limited expertise can hinder the process. Providers sometimes struggled to address patients' emotions or motivations, despite recognising their importance, and some were unsure which teaching strategies best supported behaviour change. The frequency of educational delivery, however, can overcome some of these barriers (Correia et al., 2023).

Practical constraints also played a significant role. Providers in several studies, including Roussel and Franey (2023) and Hayek et al. (2025), reported heavy workloads, time pressure, and competing clinical responsibilities, leading to the perception that education is either time-consuming or secondary to other tasks. Environmental factors, such as a lack of private space and interruptions, further affected quality, as Jafaar et al. (2020) found that patients found some locations, such as the waiting bay, inappropriate and preferred private spaces for education. Furthermore, Hayek et al. (2025) noted that some

individuals were unprepared for schooling, whether due to emotional distress, fatigue, or a lack of understanding, which reduced the effectiveness of the encounter.

Health literacy, language, and cognitive demands emerged as additional barriers. Barnason et al. (2017) highlighted the relationship between low health literacy and poorer blood pressure control, reduced communication, and lower medication adherence. Problems related to concentration, memory, and comprehension, particularly among older adults, were also identified, but few studies offered practical strategies to address them. Language barriers raise similar challenges. Drawing on the socio-ecological perspective, Epsevik and Stellefson (2022) noted that patients with limited proficiency in the language used in health facilities often rely on verbal explanations, which increases the risk of misunderstanding and inaccurate translation. In settings like Bomet County, where many patients speak Kipsigis as their primary language, translation is often performed by family members, sometimes minors, which can compromise accuracy and confidentiality. The authors argued for system-level responses, such as training lay health workers in interpretation, which aligns with Kenya's reliance on community health promoters as a key resource in patient communication.

While each study offers valuable insights, it also has methodological limitations that shape its conclusions. Roussel and Franey (2023) relied solely on individual interviews with providers, which may not fully capture collective norms or contradictions that might emerge in group discussions. Their study also excluded patient perspectives, which is particularly relevant to the present research. Hayek et al.'s (2025) survey-based approach yielded quantifiable patterns but did not explain why specific barriers were perceived as more significant than others. In addition, their work focused solely on providers, leaving the patient perspective unexplored, a considerable gap that the present study sought to address. Similarly, commentary pieces such as those by Epsevik and Stellefson (2022)

offer appropriate conceptual framing but lack empirical data from comparable low-resource contexts. Despite these limitations, the studies collectively illustrate the complex interplay of provider attitudes, communication practices, time and resource constraints, and broader structural factors that shape the quality of patient education.

These insights are directly relevant to the present study, which seeks to understand how adult patients living with hypertension in Bomet County perceive the factors that influence their education in primary care settings. The literature shows that patient education is not determined solely by content; it is shaped by relational, organisational, and contextual dynamics that patients experience firsthand. Exploring these perspectives will help illuminate how these broader themes manifest in a rural Kenyan setting and how they may affect health education for patients living with hypertension.

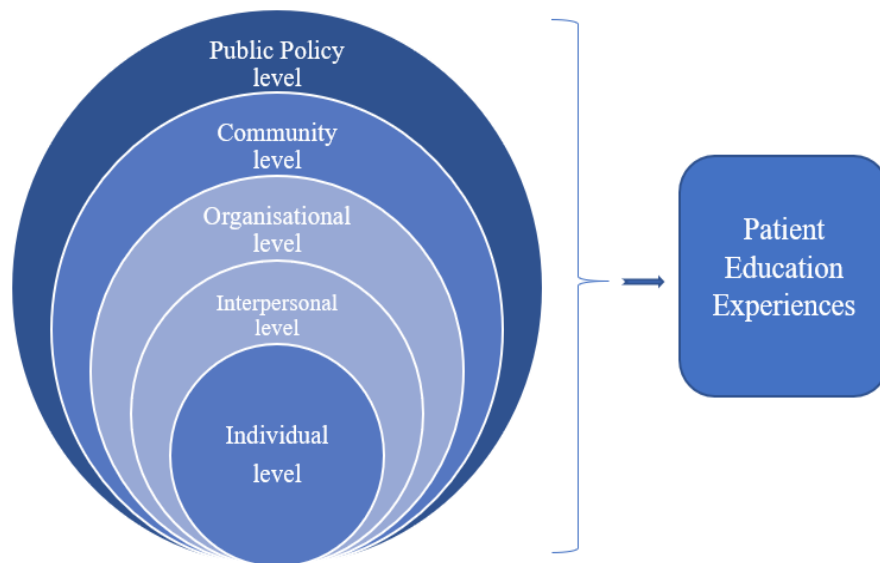
2.4 Conceptual Framework

This conceptual framework illustrates how patients' experiences with hypertension education are influenced by factors operating at the multiple levels of the social ecological model. At the individual level, patients' knowledge, attitudes, and motivation affect how they perceive and engage with the education. Interpersonal relationships with family, peers, and providers shape their support systems and willingness to learn. Organisational structures determine access and quality of educational programs. Community norms and culture influence attitudes toward hypertension and education, while policy-level factors create the overarching environment that enables or constrains educational initiatives.

Together, these interconnected layers determine patients' overall experiences and perceptions of hypertension education.

Figure 1

Conceptual Framework



Conceptual Framework: SEM Influences on Patient Education Experiences

2.5 Research Gaps

In summary, this review of the literature makes it evident that patient education is a crucial part of the management of hypertension, a chronic illness with high morbidity and mortality due to its significant cardiovascular and other complications. Various studies have shown that effective, tailored, patient-centred, and culturally appropriate patient education interventions result in reduced blood pressure and improved clinical outcomes and quality of life (Debela et al., 2023; Simonsmeier et al., 2022). However, most prior work has focused on providers' perspectives, using surveys or interviews to identify barriers and facilitators (Hayek et al., 2025; Roussel & Franey, 2023), leaving patients' lived experiences largely unexplored.

The Kenya National Guidelines on Cardiovascular Disease Management listed qualitative studies on the quality of care for CVD across counties in Kenya as a priority research area (MOH, 2024). While a few qualitative studies have investigated provider

perspectives and, in some cases, combined provider and patient perspectives (Hayek et al., 2025; Roussel & Franey, 2023), most research originates from Western contexts or focuses on other chronic diseases (Simonsmeier et al., 2022). There is limited data on patients with hypertension in the local context, necessitating the need to explore patients' experiences and provide insights into potential implementation barriers. Furthermore, while studies document factors affecting education, few interrogate how these factors interact across individual, interpersonal, and organisational levels, as outlined in the Social Ecological Model, to shape patients' ability to engage meaningfully with education. This study bridges this gap by utilising the SEM to explore patients' perspectives of influencing factors.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the research design, study population, sampling process, sample size, pilot study, research instruments, data collection procedure, and data analysis method.

3.2 Research Design

This is a qualitative hermeneutic study using a phenomenological approach. Hermeneutics involves understanding and interpreting a phenomenon and providing an appreciation of people's lived experience as it is and as they interpret it within their context, revealing both the details and the marginal aspects. It is a valuable study design because it provides insights that other designs may miss. This study adopted hermeneutic phenomenology to give a richer, more profound understanding of patients' lived experiences regarding hypertension education and to interpret how these experiences are shaped by personal, social, and systemic contexts in Bomet County. The study was conducted through focus group discussions (FGDs), in-depth interviews (IDIs), and key informant interviews (KIIs), with participants purposefully selected (Alsaigh, 2021; Renjith, 2021).

3.3 Location of the Study

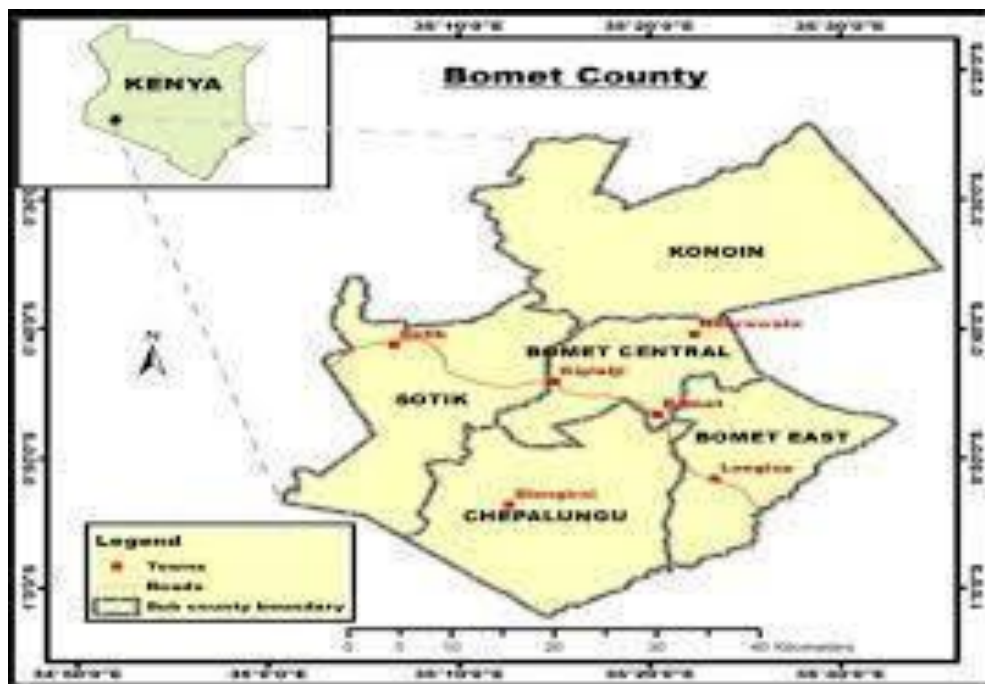
Geographical Location

The study was conducted at primary care sites in Bomet Central Sub-County, Bomet County, in the South Rift region of Kenya, with a total population of 885,900 (IHME, 2021). Bomet County has the lowest density of primary health facilities nationwide, at 1.1 per 10,000 population (MOH,2023). It has 5 sub-counties: Bomet Central, Bomet

East, Sotik, Chepalungu, and Konoin. Bomet Central has 41 health facilities, accounting for 20% of the health facilities in Bomet, and has a higher number of faith-based organisations than the other sub-counties, providing a broader array of patient experiences.

Figure 2

Map of Bomet County Showing Sub-Counties



Source: Labflow Kenya, (2022)

Study Sites

The study was carried out in primary care centres in Bomet County. It included Kapsimotwa Dispensary, Bomet Health Centre, Silibwet Health Centre, and the chronic care clinics of Kapkoros Subcounty Hospital (a public hospital) and Tenwek Hospital (a faith-based hospital). It was done in the outpatient settings of these facilities, where long-term chronic care is provided, offering patients more opportunities for consistent, frequent engagement with their providers over time. The above facilities were chosen as they offer a wide range of facilities (private and public), of different levels of care, where

primary care is provided to patients living with hypertension, providing a pool of patients who had varied experiences and therefore enriching the data. These facilities were accessed through the established road networks, by private means.

3.4 Population of the Study

The study population was adults aged 18-69 years, as this is the most frequently studied age group in national prevalence studies, and was in keeping with the life expectancy in Bomet County. Participants who had been diagnosed with hypertension at least 3 months before the study were chosen. The 3 months since the 1st diagnosis were selected to allow for opportunities for patient education, as the patient is likely to have had more than one encounter with healthcare services.

3.5 Sampling Procedure and Sample Size

3.5.1 Sample Size Determination

In qualitative research, the sample size is not predetermined; data are collected until data saturation or redundancy, at which point no new information is gathered. This is influenced by factors such as the number of themes, data quality, and participant homogeneity, among others. The recommended sample size for a phenomenological study is five to twenty-five participants and four to twelve focus groups. (Ahmed, 2024; Renjith, 2021). This study targeted 10 participants for in-depth interviews, 2-4 FGDs of 8-12 participants each, and 2-3 key informants to ensure data triangulation. The key informants were informal peer educators, that is, patients in the community with hypertension who educate their fellow patients.

Data collection reached data saturation, i.e., where no new information was collected, and additional interviews/focus groups did not yield new themes. Upon reaching this point, a few more interviews were conducted to confirm that the redundancy threshold

had been reached; thereafter, no further interviews were conducted. Participants in the in-depth and key informant interviews were excluded from the FGDs, and vice versa. A total of 12 in-depth interviews, 3 focus discussion groups of 3-12 participants, and 4 key informant interviews were conducted. No participants withdrew from the study.

Inclusion criteria: Adults aged 18-69 years and above with an established diagnosis of hypertension for at least 3 months before the study were recruited. The age range of 18-69 years was chosen based on national prevalence studies for hypertension. The 3-month duration was selected to ensure participants had sufficient time for multiple healthcare interactions, including initial education and follow-up visits, as per local clinical pathways. While WHO guidelines recommend more frequent monitoring until target BP is achieved, the 3-month criterion reflects real-world practice where patients often require this period to establish care routines.

Exclusion Criteria: Clinically unstable patients who required urgent medical attention were excluded. Patients living with hypertension with cognitive disability, as reported by care providers or caregivers, or those unable to communicate were excluded, as they may not have been able to consent or answer the study questions.

3.5.2 Sampling Process

Sampling was conducted using purposive maximum variation sampling to ensure adequate representation of patients across age, gender, locality & health facility visited. Purposive sampling ensured that patients with the desired characteristics, as defined by the inclusion and exclusion criteria, were selected. For IDIs, patients living with hypertension registered to the hypertension clinics or outpatient departments who were in queue waiting to be seen or who had already been seen, or were waiting for their lab results, were approached to establish if they met the inclusion criteria and if they were

willing to consent to participate in the study. Care was taken not to approach those who were next in line so as not to delay their care. Recruitment was done with the help of nursing teams and patient care personnel who knew the patients and where they were in the care process. The 10th interview reached data saturation; 2 more were conducted to ensure no new themes emerged, and then the study was stopped.

Participants for the focus discussion groups were recruited with the help of nursing and clinical officers at the dispensary and health centre, as well as community health promoters who knew the patients and helped identify those who met the study criteria. Selected patients were given brief information about the study by healthcare personnel and provided verbal consent before meeting the research team, which provided comprehensive information and had them sign a written informed consent form to participate. The Key informants were patients with hypertension known to the CHPs who would help to teach others with the same condition in the community informally. The initial target was 3 KIIs, which were conducted, with apparent data saturation. The 4th interview was added to ensure no new themes emerged.

The FGDs included both men and women of different ages, enriching the discussion. One FGD comprised 8 participants (4 males and 4 females); the second FGD comprised 12 participants (5 males and 7 females). By the 2nd FGD, data saturation was reached, as no new themes emerged. A third FGD was targeted, though only 3 participants arrived on time, with the others reporting delays on the way. To honour those who arrived on time and not delay them, the interview was conducted with the 3, all females. No new themes emerged from this interview, so no other FGD was conducted.

3.6. Instrumentation

The data collection tools were semi-structured interview guides created by the primary researcher, drawing on concepts from the theoretical framework and borrowing ideas from similar studies. The questions were drafted based on a literature review of previous studies on patients' experiences with either primary care or hypertension care, and on studies exploring associated factors for receiving educational interventions. They were adapted for this study because the researcher did not find a single tool that would answer the research questions and meet the objectives of this study. Supervisors reviewed the questions to ensure they would meet the research objectives. The principal researcher developed a tool for the focus group discussions, another for the in-depth interviews, and another for the key informants, as no similar tool existed in prior studies that would address the research questions. The Interview guide for in-depth interviews had three sections. The first section gathered general information from the patient's biodata and illness duration. The second section gathered information on the patients' experiences with patient education from the time of diagnosis to the present, and the third section explored the patients' perceptions of factors that affect patient education and any recommendations they had to improve patient education at the provider or health system level. The interview guide for focus group discussions had the number of participants and additional questions to augment the in-depth interviews. The interview guides were translated into Kiswahili and Kipsigis.

3.6.1 Pilot Study

A pilot study was conducted to ensure the comprehensibility of the in-depth interview guide, which served as the primary study tool. It was conducted among 2 patients with hypertension at the Bomet Health Centre who met the inclusion criteria. Findings from the pilot study were used to refine the research instrument further. Participants in the

pilot study were excluded from the main study. The interview guides for the focus discussion groups and key informant interviews were not piloted, as they were meant to supplement the in-depth interviews and allow questions to be adjusted during the interview process.

3.7 Data Collection Procedure

Data were collected by the primary researcher and a research assistant, who were trained on the study rationale, objectives, study approach, and data collection procedures.

Note-taking, interviewing skills, research ethics, and the study's informed consent process. They reviewed the guides to understand the purpose of each question and the objective it answered. Participants were recruited with the help of facility staff, who had been informed about the study objectives and criteria and approached the selected patients to ask them to participate.

Initial verbal agreement was followed by a detailed explanation of the study objectives and procedures to the patients, who would then sign a written informed consent form attached in the appendices, agreeing to participate in the study before commencing the interviews. Those who declined would proceed to receive care at the facility without any consequences. The interviews were conducted in healthcare facilities, in private areas away from other patients and providers, to ensure participants' confidentiality and to help patients feel comfortable answering the questions. Participants for the focus discussion groups and key informant interviews were recruited by healthcare providers and community health promoters before the focus groups and invited to participate in the study. Upon arrival, a similar consent process was followed for each participant before commencing the FGD/interviews.

Data audio-recorded with patient coding done while saving the recordings to de-identify patients, ensuring confidentiality. It was then transcribed and translated into English by the principal researcher or a research assistant after the interviews, and confirmed by the principal researcher, who checked for accuracy by (re)listening to the audio recordings. The transcribed data were stored in a password-protected email drive with access restricted to the principal researcher and the research assistant. There were two researchers during the interview: one conducting the interview and writing field notes on non-verbal cues not captured by an audio recorder to capture every aspect of the experiences shared, and the other alternating between the principal researcher and research assistant. The data will be stored for up to 5 years in the password-protected email drive and thereafter destroyed.

3.8 Data Analysis

Data was analysed thematically following Braun & Clarke's (2006) six-phase method. This reflexive thematic analysis approach was chosen to balance phenomenological depth with systematic rigour, as it retains hermeneutic sensitivity to participants' meanings while offering transparent steps for data interpretation, allowing the researcher to explore anticipated and emergent themes. The first phase was foundational and entailed the researcher familiarising themselves with the data by reading the transcriptions and rereading them to immerse fully and understand them in depth. Some notes and coding ideas were made during this phase and were utilised in subsequent phases.

The second phase involved generating initial codes inductively from the data by identifying interesting features. The data were organised into meaningful groups using Dedoose, a data analysis software, to ensure efficient data management. Phase three

involved searching for themes in the coded data using visual representations, such as tables. The data were classified under candidate themes and subthemes. In Phase four, the collated themes were reviewed and refined by rearranging and reclassifying themes and sub-themes, and by generating a thematic map.

Phase five entailed defining and naming the themes refined in phase four. It involved writing a detailed analysis of each theme and giving concise names that communicate the theme. The last phase, phase six, involved the final analysis and report write-up to communicate the study's value and validity.

The researcher iterated between the framework and its application throughout the data analysis and applied reflexivity by keeping a research journal to avoid researcher bias (Alsaigh, 2021). An expert researcher independently coded the interview transcripts using qualitative methodology. The derived themes were systematically compared with those identified by the principal researcher. A high level of inter-rater agreement was observed; minor discrepancies were resolved through a consensus process, which fostered critical discussion and led to the integration and final refinement of the core themes.

3.9 Rigour and Trustworthiness

The trustworthiness of the study was achieved through credibility, dependability, confirmability, and reflexivity (Moser & Korstjens, 2017). For credibility, as with internal validity, data triangulation was employed by collecting data on the same phenomenon across multiple sites, as outlined above. Additionally, there were different interview types and the involvement of various researchers in coding, analysing, and interpreting the data, ultimately leading to the findings. Dependability and confirmability were also assured by the use of an external researcher who independently analysed the

data with strong inter-rater reliability. There was also a persistent observation in which the data were examined and re-examined, with codes reapplied or relabelled and theorised, to ensure the emergent themes captured in-depth insights from the data. As previously mentioned, a reflexive journal kept throughout the research process helped the researcher identify their own conceptual lens, assumptions, and preconceptions, and how they might affect the study.

3.10 Ethical Considerations

Ethical clearance from the relevant bodies, i.e., Tenwek Institutional Scientific and Ethics Review Committee (ISERC) and the National Commission for Science and Technology (NACOSTI), was sought and granted before commencing the study. Permission was then sought from the County Director of Health to conduct the research in the public facilities listed above.

The study objectives and data collection procedures were explained to the participants, who then signed a written informed consent form before participating. Participants were assured of their right to withdraw from the study at any point without any resultant consequences or impact on the HTN care they receive.

Confidentiality was maintained by participant de-identification and non-sharing of biodata, and participation was voluntary. Refreshments and fare reimbursement were provided to the study participants during the interviews, without prior mention, to avoid coercing them into participating.

There was no conflict of interest in this study. The study findings will be disseminated to the study participants, other researchers, community health promoters, primary healthcare providers, Bomet County governments, and the Ministry of Health. This will be done through publication of the study, dissemination of its findings, conference,

workshop, and seminar presentations, as well as one-on-one engagements to shed light on its findings and relevance. This study has followed the principles of ethics: Autonomy as participation was voluntary and participants were free to decline participation or withdraw at any point in the study without any consequences to them; Beneficence as the study findings will help to improve HTN care in the country; Non-maleficence as there was no harm posed to study participants through the study process, and Justice as there was effort to have adequate representation across different groups among study participants.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSIONS

4.1 Introduction

This chapter contains the study results, discussion, and interpretation in line with the research objectives. The study sought to answer the following research questions: what are the lived experiences of adults living with hypertension regarding education, what sources and formats they use to receive this education, and what they perceive as factors affecting their education?

4.2 General and Demographic Information

4.2.1 General Information

The study included 12 in-depth interviews, 3 focus group discussions of 3-12 participants, and 4 Key informant interviews, totalling 40 participants.

4.2.2 Demographics

Participants included 40 adult patients living with hypertension, with a mean age of 58 years and a mean duration of diagnosis of 6 years, comprising 28 females and 12 males.

4.3 Findings

The table below shows the major themes that emerged from the coded data, along with the subthemes and merged codes. It is followed by detailed descriptions of the themes, along with associated participant quotes.

Table 1*Themes, Sub-Themes & Codes*

Themes	Subthemes	Codes
Content & Quality of Education	Explanations of hypertension	HTN causes/ risk factors, Symptoms, complications.
	Lifestyle modification	Diet, Exercise, Stress management, Alcohol reduction, and Initial management.
	Medication use & adherence	Medication adherence
	Variability in Education Quality	Sufficiency Frequency Accuracy Consistency of teachings. Varied experiences in different facilities. Applicability/ Benefit.
Patient Perception & Adherence	Patients' Diagnosis experience	Adequacy of Explanation/Understanding.
	Patients' Understanding of Hypertension	Stress, DM & other illnesses, spiritual forces. Alternative causes and therapies
	Patients' Adherence to the Education	Patients adhered to counsel on lifestyle modification. Patients adhered to the medication counselling. Financial barrier to medication adherence.
	Patient attitude	Patient willingness & perceived ease of control Passive role Perceived Benefit Apprehension Self-efficacy
Sources of	HCPs teaching	Teaching from HCPs

education	patients	
	Community members	Teaching from CHPs Peer learning and support in the community Information given verbally Patients taught in groups/as individuals
	Media	Information via radio Information from books/print media
Interactions between Pts & providers	Trust in the Health education provider	Patients trust HCPs, Community Lack of trust in CHPs/community members
	Patient-provider relationships	Good relationships Provider willingness to engage patients Time constrains Assumption of the patient's knowledge, apprehension Language influence
	Community Support	Community Members' support
Patients recommendations	Community Outreach	Recommendation to do community Outreach
	HCP teaching	Recommendation for HCP teaching

4.3.1 Content & Quality of Hypertension Education

Patients reported on the content of what they were taught, including information on hypertension causes and risk factors, hypertension symptoms, hypertension complications, lifestyle modifications to implement, and medication adherence. They shared varied experiences, with evidence of variable quality of the education received.

Explanations of Hypertension

Some participants reported being taught about hypertension causes, symptoms, and complications. One patient reported being taught what hypertension means and what

causes it at the point of diagnosis. *“Hypertension normally comes through stress, sometimes even the body weight. When the body is- uuum..., it makes even the veins narrow when you have a lot of fat. Maybe the body- So, it makes the veins narrow, and sometimes you can- the blood flow isn't moving very fast, the way it is supposed to. That is now the time you can get what is called the blood pressure.”* A.T., female, 58years.

“The symptoms of high blood pressure? I was told you might feel tired, have headaches, sometimes visual blurring, and even feel your heart beating a lot.” *“I was told it can cause,...one is that it can cause..eeh... stroke..., it can cause,... one of the veins in the (pointing to her head) can burst; another one is to do with kidneys, and then to do with the heart...It can...this cardiac arrest, ...when it is extreme...The kidneys become overworked, mmmmh, the kidneys can fail.”* C.R., female, 61years.

Education on Lifestyle Modification

Many patients were taught lifestyle modification to control hypertension, with some counselled to begin with lifestyle modification before commencing medication use. This comprises counsel on dietary modification, physical activity, stress management, and alcohol reduction. Some received a heavier emphasis on water intake than on other aspects of lifestyle modification, and still others on using sea salt preferentially over regular table salt. Regarding this, one participant said: *“I was told not to use salt or solid cooking oil. I was also told to use only a little. And to drink a lot of water.”* H.N., Key Informant, 38years. Another participant said, *“...I was just told to take sea salt.”* D.C, female, 28years. Some, however, preferred regular salt, with apparent confusion on the different salts, yet with emphasis on salt reduction, *“About salt, we are also told to put a little, but make sure the salt has boiled. You boil it in the fire and add salt. There is one called sea salt. There was a time when I was using sea salt, but it wasn't helping; it's better with the natural one. You add a little. Some people experience low pressure when*

using sea salt. So, I think the recommendation is to add a little of the natural salts; you just put a little. Just a little. And make sure you drink a lot of water so that it will help in digestion.” FGD 2. Water intake seemed to be (over)emphasised as a key way to help control blood pressure:

“I got information from [mentions a public facility] from the doctor, and they told me to take care of what I am eating, take a lot of water,” N.K., female, 49years.

And still another participant said, *“For example, when I came, the doctor who saw me told me to take a lot of water.”* C.K., female, 66years.

“Sometimes it's high, but not very high. But I use water. The people here in the dispensary tell me to drink a lot of water, not to start medication yet. I drink a lot of water before I sleep. When I wake up in the morning, I drink more water. When I go to the farm, I continue to drink and drink.” J.S., male, 66years.

Counsel on physical activity was also given to patients:

“To add on, we are just told to do a lot of exercise. Do exercise even at home in that garden you dig, you walk around, just like we had been taught in the morning. So you do exercise to reduce, to come down.” FGD 2.

Alcohol cessation also featured in the lifestyle modification counselling. A patient educator would teach her peers about it: *“I tell them, you know, this blood pressure, it also comes with what we eat, there are some things one shouldn't eat, that is what I think. If someone is drinking, let them stop drinking. Some take these strong drinks, then they come and here they have high blood pressure, what is it? Pressure and many problems. It is brought about by many bad things we take.”* H.N., Key Informant, 38years.

Participants also reported being told about stress reduction:

“We hear them through the church. We are normally taught how to manage stress, family issues, the children, even the neighbours and colleagues at school, because sometimes, when you live in peace with people, you get to manage your stress. We can even learn through the media that stress normally makes the blood pressure rise,” A.T., female, 58 years.

Medication use & Adherence

Information on medication adherence, including timing of medication and avoidance of missed doses, also featured strongly:

"I have been told it's a lifetime. That you take it [medication] for a lifetime. You do not have to escape even one day." A.T., female, 58years.

“..., but medications I have not stopped taking, I am still taking the way the doctor has said, I have been following the advice. Now what I know is that if I do not take the medication, because there are challenges I sometimes face, I feel there are changes in my body, but when I take the medication, I feel I am back to normal.” B.M., male, 65years

“So for pressure, you are told to take a lot of water and make sure you take the drugs, the ones that you have been prescribed, that you have been given on time. If it is in the morning, one, one in the evening.” FGD 2.

Variability in Education Quality

Significant variability in the quality of education received by patients was noted, including the sufficiency, frequency, accuracy, consistency, and applicability of the information provided.

Some patients felt the information given by providers was sufficient to enable them to control their hypertension and were grateful to have received it. *“The teachings we have got, we are thrilled. Because some of us can eat a lot of things without understanding, and then we go and sleep. So, we thank God for taking care of us that way. Also, we should reduce food. So, for doctor's matters, sometimes we get medication, and one tells you that when you put salt on vegetables, use only a small portion in your hand. They say hold a small amount and put a small amount that is not too much [demonstrating]. So, we are saying thank you to the doctors because when we go, they teach us that way. They also say to take care of what you eat. Milk is only one glass. Do not add. They also tell us to take water. When you feel pressure is high, drink water. So we are saying thank you.”* FGD 2.

“Uuuummmm, we have already received the education. There is no need to give more, unless there is new information.” K.B., male, 53 years.

Other patients, however, felt that the teachings they had received were insufficient or were not happening in the health facilities. *“When I used to go to [mentions a faith-based health facility] to refill medications, we were just queuing, and after taking medications, we went home. There was no day we were taught when we went.”* N.K., female, 49 years.

Another participant added, *“No, I have never been given other information. I am only told to take medication.”* ‘And other things to change, like what you’re eating...?’ *“Diet?” ...No, I have never had someone tell me such things.”* B.M., male, 65years.

Some patients reported receiving education frequently, whereas others reported being educated only at diagnosis and not during subsequent visits.

Person 3: *“After I was told that I have pressure, I started reducing fat [intake], anger, and those thoughts that bother you. We were also told to reduce the things that you eat, drink a lot of water, and stop thinking about things that you think about often.”* Person 1: *“We are saying that we usually go to the hospital, we get checked, and we are told to drink a lot of water. Some of us are told not to think or not to stress. Others tell us that when you are too high, swallow medication. So that is how we, people with pressure, stay. We get help this way.”* FGD 3.

“At times, we are not told. Like here, we are just told it’s high, take medication.” FGD 3.

Another patient said, *“I don’t think so. Because you know, when you come to the hospital, you are being treated. Sometimes you are not given the information. Like today, I am taking the medicines, so if other people are coming, I will be taking them. They are now discovering that they have high blood pressure, but sometimes they do not get the information.”* A.T., female, 58 years.

Some participants were taught accurate information about the cause of hypertension, whereas others were given inaccurate information.

One participant was informed about the multiple risk factors for hypertension: *“Now I asked and I was told there are so many factors, hereditary, you can inherit, sometimes it’s lifestyle, and sometimes...ehmmm, yeah, that kind of foods...I didn’t understand what they meant by lifestyle, and then they told me mostly foods, especially salt...so they advised me to take little salt, little oil, and a lot of water and to reduce sugar.”* C.R., female, 61 years.

Another patient was informed that hypertension was the cause of her developing diabetes, which is inaccurate: *“I was told that my pressure was so high and it caused the diabetes that I have, which caused the blurry vision that I had.”* N.K., female, 49 years.

Most patients reported that the teachings they received from different providers were usually consistent and did not conflict. *“All these doctors would say the same thing; it’s always the same thing. They talk about water, oil, and reducing salt.”* J.S., male, 66 years. Another participant affirmed that the information was usually non-conflicting, *“No, it is not different, it is all the same.”* H.N., Key Informant, 38 years.

Patients had varied experiences across the facilities they attended, with more education in some than in others.

Participant 1: *“At times, we are not told. Like here [a dispensary], we are just told it’s high, take medication. But if you are going to other hospitals, they tell you that you are supposed to drink a lot of water, do not be stressed...”* Participant 2: *“On that side, like here, we don’t have teachings. As long as they know you have pressure, and they help you. Other hospitals that you may go to, such as private ones, might ask how you are doing or how you started, so that you are given the teachings.”* FGD 3.

‘Where did you get that information about taking medication?’ *“Here in [mentions a public facility]. And when I used to go to [mentions a faith-based facility], I was refilling medications and was not educated on anything.”* N.K., female, 49 years.

Most participants reported that the teachings were applicable and beneficial, whereas some found them impractical.

“I see it is helping me a lot, especially this exercise. It has really helped me a lot. Even with my weight, it has come down.” ‘And pressure?’ “Even pressure has come down.”

J.S., male, 66 years.

“They can manage and are happy, and they see that after I had taught them, they follow whatever I told them, and since then, their blood pressures are okay.”

N.N., Key Informant, 54 years.

Person 1: *“They teach about what to eat, like eating a lot of vegetables and a small ugali. Is that really possible?”* Person 2: *[Laughs] “...to eat a lot of food and to eat...”*

Person 3: *“Yes, it is true, that is what they usually tell us. Ugali to be small, vegetables a lot!”* Person 1: *“Sometimes you are very hungry, you just...”* Person 3: *...you eat a lot!*

(laughing) Person 2: *“better even water, better we take water...,”* Person 3... *Honestly, please help us, because sometimes they tell us food, to reduce, to eat a little, mmmhhh [laughs].* Person 2: *It's better even than water, but food is hard!” [continues laughing].*

FGD 3

4.3.2 Patient’s Perception and Adherence to Hypertension Education

Diagnosis Experience

The data suggest that some patients may not have been taught, or may not have understood, the disease and need to adhere to medication at the point of diagnosis, leading to treatment defaulting, and only returning to care when symptoms recur/begin:

‘Can you tell me about your journey with hypertension since it was diagnosed?’ “Just last week.” ‘Was that the first time you were diagnosed?’ “No. I was diagnosed some time last year in [mentions a private facility]. I was given some medication, but after some time I stopped...I used it for 2 weeks, then I stopped. I became okay. I stopped

completely, and then I stayed like that up until last week, when I was feeling some headache, and the head I was feeling like its heavy, and my eyes were not normal. So, when I came here, the blood pressure was 197/108...” C.R., female 61 years.

Understanding of Hypertension

Most patients understood the cause of hypertension as being related to stress, and some to other health conditions such as overweight/obesity and acute illnesses. Others said they didn't really understand the disease well.

One participant, when asked if they were taught the cause of hypertension, responded, “*I know it's because of stress.*” ‘Where did you hear about stress as a cause of high blood pressure?’ “*Even on the radio. I usually hear them saying that for one to be diagnosed with hypertension, it's because of stress.*” ‘What else have you heard from the radio regarding hypertension?’ “*I don't know. I just heard the one about stress as a cause of hypertension.*” C.K., female, 66 years.

"Generally, stress was contributing to hypertension... my husband leasing out all available land, and so for the children to eat, I had to work hard." The same participant adds, “*You know blood pressure goes up when you are fat or overweight, and that causes problems, as at times I feel like I have difficulty in breathing and getting tired easily.*” V.S., female, 52 years.

“When you go to the lab, there is a problem of, let's say, chest congestion, so that one will make the pressure to go up, so treatment, I think we will start immediately. So, some contribute if there is another disease. Even a cold can contribute to pressure rising. The doctor will prescribe some medicine which will suppress the cold, and it will be normal.”

FGD 2.

Still, some expressed that many patients seemed not to understand the disease well: *“Many people have high blood pressure and don't know specifically what is happening with the disease. Sometimes we meet at the hospital with other patients and see them picking up medications, going home, and they do not know what is happening.”* C.K., female, 66 years.

The above corresponds with the sentiments of an FGD member: *“The cause of this disease, we have not really known it, so that we should leave certain foods aside, and then put some aside in what way. Does anger cause this disease, or does food? We have not understood that. Because if we continue like this, more people will be affected by this disease. If we had people who could investigate whether someone can get this disease from anger or from food, it would benefit us to know how to remove it so that, if it is anger, we move away from it, and if it is food, we get rid of it. Now, I think you can take that question forward, you research so that you can come and explain to us.”* FGD 2.

Some patients were also told about alternative causes of hypertension and therapies in the community, though they did not seem to embrace them:

“Sometimes people tell me to take herbal medication, but I only took it twice, and I stopped because there was no difference and nothing was changing.” N.K., female, 49 years.

“No, it's true. Other than these people, especially these Christians, who say that these diseases, high blood pressure, diabetes, and hypertension, are. It is not normal that it can be, [laughs]...some supreme forces can be used to ...can be sent to you. Superstitions, that is superstition. But I told God no, you're the one who created me, and then you'll protect me, hmmm.” C.R., female, 61 years.

“Other than these liars who say that they cure pressure. You hear them say it, but I have never tried it. You hear people saying they have herbs, they are there, and they are many, they lie to people that they cure pressure.” ‘Using?’ ‘Just in the community, not the doctor (laughs).’ ‘And you said they use what?’ ‘They use herbal medication.’ ‘They sell to people?’ ‘Yes. That is there, in a big way.’ B.M., male, 65 years.

Patients’ Adherence to the Education

Many participants reported adhering to the counsel they received on lifestyle modification and medication adherence, resulting in improved blood pressure control.

“So, I was told the pressure is high. Then I was told how I can control it through diet. I changed my diet. I reduced my salt intake, sugar, and fat.” B.M., female, 68 years.

“And I also follow what they told me regarding the salt intake and tea leaves...I am currently taking a small amount of salt and tea leaves. I stopped using the solid one, and I am currently using liquid cooking oil.” C.K., female, 66 years.

“I just started medication and I continued with it, and I took care of those things that I should not, I took care of myself, and drank a lot of water mostly. So, mostly when they test, it is not that bad. I have taken care. Water is what I mostly take. Water is what I take seriously.” FGD 1

“Medications, I have not stopped taking, I am still taking the way the doctor has said, I have been following the advice. Now what I know is that if I do not take the medication, because there are challenges I sometimes face, that time I feel there are changes in my body, but when I take the medication, I feel I am back to normal.” B.M., male, 65 years.

Many participants expressed financial and access barriers to adhering to the counsel given on lifestyle modification and medication adherence:

“You know, for us women, at times it is hard. At times, we do not even have a shilling. Please help us figure out how to get [medication]. Because at times you come here to take medication, and the pressure is up. And even I, the reason I started coming here (to the Dispensary) is that I don't have the money to buy. At times, I don't have money, and we are told not to miss it; we should take it every day. And at times, I do not have money. What can I do to get that medication?” FGD 3.

“Again, a problem is medication. When we come to this facility, sometimes when you ask for medication for pressure, it is not there. There is no medication. So, if there is any way possible, CHV should be having these types of pressure medication.” FGD 1.

“There are no challenges regarding the teachings. It is only that implementing can be challenging. You know, sometimes in the villages we may not find the cooking oil we were told, and have to buy the other one.” K.B., male, 53years.

Patients Attitude

Patient's attitude greatly influenced their reception of and adherence to the education, with most patients being willing to learn and to adhere to the lifestyle modification and medication use they were counselled on, perceiving it to be beneficial:

“But with me, pressure is manageable, like if you follow the teachings, you will manage,” FGD 1.

“So, it is just things that are understandable. And it is also not much. If it is controlling pressure, just a few things you are supposed to observe. But they are not hard.” FGD 2.

‘Are the teachings given to you easy to follow?’ “They are easy. They are easy because they concern your health. So, everyone loves to follow and listen keenly so that they can get well. You know if you refuse, pressure will not be controlled.” FGD 2.

'Is there anything that might hinder you from getting an education on high blood pressure?' *"Nothing. It is good for me to be taught because I am always willing to listen and understand."* A.T., female, 64 years.

"If they teach me, I am willing and I will follow what they tell me." Though the same participant took on a more passive role in their care and engagement with the healthcare system: *"I just take medication without knowing. They have prescribed medications, and so I have to take them. And I also follow what they told me regarding the salt intake and tea leaves."* C.K., female, 66 years.

The information above is similar to another patient who said, *"When I was told to stop those things that I had been told, I did so. I did not bother overthinking something else."* 'Are there things you did not understand or wish you had been told differently?' *"I did not think of anything. I just did what they told me."* 'Have you received conflicting information regarding hypertension?' *"Nothing. Are you satisfied with the education that you have received?"* *"I just followed what they told me to do, and so I don't know whether that was sufficient information or not. Maybe you can add some information today."* A.T., female, 64 years.

Many patients found that the education was beneficial in helping them control their hypertension and require fewer drugs for the same. B.M. says, *"Yes, it has been helpful. Up to date, I don't take strong medications; I take only that one."* B.M., female, 68 years.

Another participant concurs, *"When I reduced the salt intake together with the tea leaves, I felt like my body got better. I stopped feeling that my pressure was high, because I did everything as they explained to me, and it has helped me."* C.K., female, 66yrs.

A patient, however, expressed fear and apprehension regarding learning about hypertension complications, relating it to worse outcomes. When asked about perceived associated factors, N.K.'s response was, *"Nothing really. Maybe you tell us something and we become scared, and later I will be thinking to myself that maybe by the time they are educating me on all those things, I am almost dying."* N.K., female, 49 years.

4.3.3 Sources of Hypertension Education

Sources of education on hypertension included healthcare providers, community health promoters, and peer educators. These taught patients in healthcare facilities, as individuals or in groups, in community groups including churches, in homes, and through media such as the radio.

Patients taught by healthcare providers

Many patients reported receiving education from their healthcare providers in health facilities. These may include doctors, clinical officers, nurses, or nutritionists

"I got information from [mentions a public health facility] from the doctor" N.K., female, 49 years.

"When I was in [mentions a faith-based health facility], I was told to reduce the cooking fat, sugar, salt, and do some practices; run, farm work, dig some garden, what what, drink a lot of water, eat a lot of oranges and bananas, etcetera..." FGD 1.

"So, for this and for all the information, we come to collect from the nurses." FGD 1.

Information from healthcare providers was usually given verbally, administered to patients as individuals during the clinic encounter, or in organised groups:

“I got to know myself, I have pressure. At the time I went to the hospital, I was sick. I was told that you have pressure and diabetes. The doctor told me, ‘Now you must leave sugar and salt, and you must drink a lot of water.’ ” FGD 1.

“I was told at the hospital to reduce salt intake and tea leaves.” C.K., female, 66years.

“I was told in [mentions a faith-based health facility]. One day, they held a meeting for all the patients with pressure and taught us to eat frequent small meals, as it was not advisable to stay hungry. They also talked about using a small amount of salt.” J.K., Key Informant, female, 68yrs,

Patients taught by Community members

Information received in health facilities was augmented and supplemented by that obtained in the community by both community health promoters and peer educators. This was also either done in gatherings or one-on-one.

Community health promoters were a key source of education:

“Community, it is recently that J. C [a CHP], the one who was here, was teaching us.”

‘Okay, where was she teaching you?’ “She even comes to our homes and tells us to live like this or that, and we get help.” H.N., Key Informant, female, 38years.

“Yes, there are these people who are called community health workers...mmmh.” ‘What do they teach?’ “They teach about diet.” ‘Mhm?’ “Take a lot of water...reduce salt...and eat a lot of vegetables.” C.R., female, 61years.

Informal peer educators, who are patients with hypertension who teach other patients, also play a key role in patient education. Peer education also happens in informal gatherings.

‘Is there any information you have received from other sources other than the doctor, like the media or in the community?’ *“It’s only my friends in the community, those who have an illness like mine.”* When asked about complications of HTN, *“That one, when we’re having conversations, you hear, it can damage the kidneys. That one I have heard in the community, not elsewhere.”* B.M., male, 65 years.

“Even with the information I have been given, when I hear of someone who has high blood pressure, I tell them to stay like this or this, or this. I also have the same problem. So you relate well.” ‘Okay. Are there some you are already teaching?’ *“Many. We have many.”* H.N., Key Informant, female, 38 years.

Peer educators derive the information they teach from healthcare providers.

‘Okay, and the information you give to others, where do you get it?’ *“In the hospital. Yes, nowhere else. Only the hospital. I tell them, ‘The doctor told me, you stay like this and this and this, follow and see’. Someone goes for one week, then comes back and says, ‘You know what? You have helped me, nowadays I sleep.’”* H.N., Key Informant, female, 38years.

“When I got high blood pressure, I came to the dispensary, and that is what they taught me, and so I decided to take that information home. When I meet my friends, I also teach them.” R.S, Key Informant, female, 62 years.

Information from mass media

Some patients would get their information from the media, with the radio being most prominent:

A participant, in responding to a question on hypertension complications, said, *“Sometimes it affects the kidney.”* ‘Where did you get to know that from?’ *“I heard on*

the radio. They were saying that people with hypertension and diabetes tend to have their kidneys damaged.” ‘Which other complication did they mention?’ *“I just remember hearing about the kidney.”* ‘Only?’ *“No. They even said at times it might affect the heart. I think those are the only two they mentioned.”* C.K., female, 66 years.

“But I’ve been hearing it even through the radio, all these teachings, I’ve been hearing.”

C.R., female, 61years.

Some patients derived health information from print media such as books, which enhanced the teachings they received from providers:

‘Is there anywhere else you’ve been hearing this information, rather than the doctor and on the radio?’ *“M-m. Perhaps local people at home, those who have this information. And even when you read in books, you also see.”* ‘You’ve been reading the information also in books?’ *“Yes... These science books, ‘So, the science books also have this information?’ ‘Yes.”* ‘Okay. And so, the people who are teaching, the doctor, how do they teach?’ *“No. Like me, I was just told. So, I caught it very fast because I already knew.”* C.R., female, 61years.

“...through reading, even through the media. We can even learn through the media that stress normally makes the blood pressure rise.” ‘So, other than the media, are there other ways that you have learnt more about hypertension?’ *“Yes, you can even read through the books... Yeah, I have been reading.”* A.T., female, 58 years.

4.3.4 Patient-Provider Interactions

Interactions between patients and educators were positively influenced by factors such as trust, strong relationships, and language. Patient-provider interactions were also noted to

be affected by time constraints, provider willingness to engage patients, and patients' attitudes toward the education provided.

Trust in Health Education Provider

Participants expressed a high level of trust in their providers, which facilitated the receipt of health information.

“It's only that we are depending on what the doctors are telling us because they have studied it and they treat. So we trust them so much.” C.R., female, 61 years.

“I am satisfied because now we are usually told the doctor has the final say. And when the doctor says ‘take poison’, you can even take, we believe the doctor, just out of trust, nothing else, the doctor has the final say.” B.M., male, 65 years.

Some patients also reported a lack of trust or confidence in community members' teachings or community health promoters' confidentiality:

‘What about hearing it elsewhere?’ ‘Hearing, I have been hearing other people say it, but I have never understood it well, because you understand well when the doctor tells you’, B.M., male, 65 years.

“And then they [CHPs] can also take your blood pressure, and then they talk about you. You don't know how many secrets they're keeping. But, as long as you get treated, even if people talk about you, it is okay.” C.R., female, 61 years.

Patient Provider Relationships

Participants reported that providers were generally willing to engage with them and teach them about hypertension, but this was not always the case. In response to a question about perceived barriers to education, a participant said, *“I don't see it being hard for them to teach us.”* ‘What do you think then makes it easy for them to educate you on

hypertension?’ *“Because they are willing.”* Whereas the same participant noted that unwillingness could also be a barrier, *“...At times they are not just willing to do so.”* D.C, female, 28 years.

An FGD member observed that it is not easy to ask providers questions: *“It is not easy. It is not easy for a doctor to sit down and listen to you ask. They serve you. It is not easy for them to be still for you to ask questions.”* ‘Why do you find it hard to ask questions?’ *“Because we also see when they come to where you are, it is to check your blood pressure to tell you pressure is up, pressure is down, take medication, have you taken medication in the morning or not. Just like that, and they leave you like that. They do not stand to ask you, mum, is it this way or that way, and then you can explain to them. It is hard.”* ‘Why do you think that is what happens?’ *“Even we wonder why the doctor can’t have pity and ask you, ‘Mum, this pressure, what can you do for it to reduce or what can you do for it to go?’ We usually wonder.”* FGD 3.

Some participants noted that healthcare providers may have been under time constraints, which may have been a barrier to engaging with them.

A respondent's answer to a question on perceived barriers was, *“Too much work. When there are many patients, attending to all of them and giving information can be time-consuming. And normally when the patients come, they come with different diseases, not only high blood pressure, but also other diagnoses.”* A.T., female, 58 years.

“You know, in the hospital, there are so many people queuing. So the doctor will not spend many minutes explaining to one person; maybe at times, they can skip. They are willing to, but due to the queue, the teachings cannot be properly caught.” FGD 1.

The assumption that the patient already has the information was also identified as a barrier to patient education:

“We don't know. But maybe they assume we have been taught elsewhere. The healthcare provider might be thinking to themselves that they might have been taught elsewhere, because it might not be possible for someone to take medications without being educated. In a place like the dispensary, they take my blood pressure, sugar, write a prescription, and I go home. Then, when I come to a place like [mentions a referral facility] and they examine me, they think that where I have been going for medications already educated me on hypertension, and yet I was not taught. Have you understood what I am trying to say?” C.K., female, 66 years.

Some patients perceived healthcare providers as being apprehensive about addressing potential complications and therefore avoiding discussing them with patients:

“Maybe they are thinking we just take medication to prolong our lives till we reach a point where we die, as it could be disturbing to the healthcare providers seeing us in that situation and not knowing what to tell us.” N.K., female, 49 years.

Some patients' perspective was that patient education was not a primary role of the healthcare providers,

“You see, a doctor has their job of serving other people. They do not have the opportunity to talk to people like you. They treat one person after the other, so they don't have the time to give questions, and also, we don't have time to ask because they are serving another one who is ailing.” FGD 2.

Participants identified language as an essential factor in the understandability of the education: *“You know the language is also hard. If you come to speak Kiswahili, we do not hear.”* FGD 1.

Providers' use of the local language was a facilitating factor in patient education:

“They are understandable, because even in the media, the one who teaches is a doctor who understands the local language. So you listen to your radio.” FGD 2.

Community Support

Support between community members was identified as an essential factor in peer education:

“I have a friend who has high blood pressure, and we are usually encouraging each other because if we do not take medication, that means you just want to die from it.”

N.K., female, 49 years.

‘Have you also been teaching other people about these?’ *“Yes, we tell each other what to do.”* ‘Who have you been teaching?’ *“My neighbours have hypertension. So many people have been diagnosed with hypertension and diabetes.”* J.K., Key Informant, female, 68yrs.

4.3.5 Patients Recommendations

Patients gave various recommendations to improve patient education in facilities and in the community.

Recommendation on Healthcare Provider Teaching

Participants recommended that healthcare providers take the initiative to teach patients about hypertension.

“At the first diagnosis of hypertension, they (healthcare providers) should educate people on everything, including the causes of it, for one to be able to understand their illness.” A.T., female, 64years.

They recommended that healthcare providers incorporate the teachings into routine care and structure it to ensure the information is comprehensive.

“To come up with a lesson plan so that if a patient with hypertension comes to you, then you educate them. Even young people should be educated, because stress is not necessarily found only with the old; young people have things that stress them too. So everyone should be taught about hypertension. So, anyone who comes to you should be taught. Because if someone is just given education and told to drink water, that is not sufficient information.” C.K., female, 66yrs.

Recommendation on Community Outreach

They also highlighted the importance of community outreach, especially in raising awareness about hypertension.

“If they go to the homes of the people who have hypertension and carry out some education, like the CHWs. Suppose they keep on visiting homes. Because at times, other people do not know they have high blood pressure. So if they visit homes, they teach them how to manage high blood pressure, then it's better. And are there things that you think affect the delivery of the information? Sometimes, you know, people sit at home, not even having an idea that they have high blood pressure. Unless they come to the hospital, and that is when they discover they have high blood pressure. So some of them are just sitting at home without the knowledge. So if the health workers or CHWs go

round now the homes, that is the time now they can get to know that they have high blood pressure.” A.T., female, 58 years.

“I recommend people to come up to where we are, because at times we live far, we may not get to the health facilities, especially the elderly. They may not be able to come to the hospital to be informed about how to take care of this pressure or how to control it.”

B.M., female, 68yrs.

4.4 Discussion

Outlined below is a discussion of the results above, based on the study objectives.

4.4.1 Objective 1: Patients’ Lived Experiences of Hypertension Education in Bomet County’s Primary Care Settings

The findings of this study reveal that patients' lived experiences with hypertension education varied considerably in content, delivery, frequency, and perceived quality. Some patients reported having received information on the causes, symptoms, and complications of hypertension, identifying psychological stress, overweight/obesity, and acute illnesses as key causes. However, others demonstrated only partial understanding, or even erroneously linked hypertension or hypertension medications to causing diabetes. This finding is partially consistent with those of Mustara et al. (2025), who conducted a systematic review and meta-analysis examining the key content of health education and its impact on medication adherence among patients with hypertension. Most studies in the review included knowledge about hypertension and its complications as part of hypertension education, with increased knowledge in these areas associated with improved medication adherence. The studies included in the review were conducted in HICs and LMICs, including Kenya. In the current study, participants' understanding of hypertension was partially accurate, but some of it was based on community beliefs and

perceptions. This may point to the need for more accurate explanations delivered by knowledgeable healthcare providers.

Furthermore, there was significant variability in the teachings participants reported receiving, with some not receiving key components of hypertension education, such as lifestyle modification. There was also considerable variability in the information obtained from different facilities, with some participants reporting receiving information from particular facilities and others not receiving education from those same facilities. This variability could be due to a lack of structured hypertension education guides across healthcare facilities or to various barriers to effective patient education. It, however, highlights the need for consistent, evidence-based education to promote accurate understanding and adherence, as underscored by Correia et al. (2023) & Mustara et al. (2025).

Patients also described experiences with management-related education, including lifestyle modification and medication adherence, with some stating that they were only told about medication use. Lifestyle advice focused primarily on dietary changes, exercise, and stress reduction. Notably, water intake and salt reduction were emphasised, partially consistent with Ministry of Health (MOH) recommendations of <5g salt per day. There was, however, a noted over-emphasis on water consumption, which is not explicitly addressed in Kenya's National CVD Guidelines and is, in fact, harmful in those with renal or heart failure (MOH, 2024). The reason for this over-emphasis on water intake, and, for some participants, the sole dietary adjustment for hypertension control, is unclear but may be due to insufficient knowledge among healthcare providers who provide this information. While adequate hydration is essential for overall health, drinking water without considering other dietary strategies to manage hypertension lacks

scientific support. This underscores the need for healthcare professionals to receive adequate training to provide patients with accurate information.

Some participants found stress-reduction advice impractical or irrelevant, reflecting findings by Touray et al. (2023), who observed that patients often receive generalised lifestyle advice that lacks contextual adaptation. Contextualising information to individual circumstances enhances understanding and compliance (Roussel & Franey, 2023), suggesting that patient-centred communication remains inconsistent in this study. Lack of provider training in education techniques may contribute to the provision of generalised, non-contextualised information. Nevertheless, in this study, most participants found the education understandable, applicable, and beneficial to their lives, possibly suggesting that some of the delivery was contextualised and aligning with the notion that structured therapeutic patient education (TPE) enhances psychosocial well-being (Correira et al., 2023).

Regarding medication adherence, participants recalled receiving information on dosage, timing, and the importance of adherence. This is consistent with findings from Mustara et al.'s (2025) review, in which participants were taught about medication adherence and the risks of non-adherence. Yet, concerns about polypharmacy and side effects persisted, reflecting limited pharmacological literacy. Trigos-Carillo et al. (2025) similarly found that older adults often comply with medication instructions even when comprehension is limited. The participants in the current study indicated a willingness to adhere despite a partial understanding. This could be due to the paternalistic approach to healthcare in the Kenyan setting, which may be similar to that in the Trigos-Carillo et al. (2025) study, leaving little room for patients to ask questions beyond the information provided by healthcare providers. In the Gambian study by Touray et al. (2023) on diet-related

education, some participants reported at times agreeing with the doctor's dietary counsel, even when they found it unacceptable and did not intend to adhere, due to an imbalance in power between patients and providers. This reflects the need for more comprehensive information from providers, with clear explanations, as well as a change in the provider's approach to a more patient-centred interaction with patients.

The patient's experiences with hypertension education reflected non-structured delivery and non-uniform content, frequency, and quality. This is in contrast with Khanal et al. (2021) & Ranjbar et al. (2024), who demonstrated the benefit of a structured, comprehensive educational package for hypertension education that ensured all relevant health information was covered adequately. This difference could be due to the presence of a structured educational format provided by the ministries of health in the studies listed above, unlike in the Kenya National Guidelines, which do outline what constitutes information on non-pharmacologic management of cardiovascular diseases, but lack a structured format that can be used with ease by all healthcare providers. (MOH, 2024).

Overall, patients' experiences with hypertension education were highly varied, ranging from satisfaction to dissatisfaction: some valued comprehensive education, while others reported receiving minimal or no instruction. This variability mirrored findings by Trigos-Carillo et al. (2025), who noted that health education was sporadic, unstructured, and uneven across facilities. The similarities in the two studies are likely due to comparable study settings, as the Trigos-Carillo et al. (2025) study assessed patients with chronic illnesses receiving care across various public facilities. They were also from both urban and rural areas, having varied contexts and therefore varied experiences. It, however, contrasts with findings from Jafaar et al. (2020) in a Malaysian study exploring patients' experiences with the educational component of a nationwide enhanced primary

healthcare service delivery. In that study, some participants reported experiencing information fatigue as they received the same messages at triage and in the consultation room, despite being seen by different providers. The participants in the Malaysian study had a more homogenous experience, compared to the heterogeneity in this study's participants' experiences. This is attributable to the intervention being nationwide, and therefore enabling consistency in patients' educational experiences, as opposed to our setting, where different providers in different facilities provide education as they deem fit.

4.4.2 Objective 2: Sources and Formats of Hypertension Education Delivered in Bomet County's Primary Care Settings

Healthcare providers were identified as the leading and most trusted source of hypertension education among patients in Bomet County's primary care settings. Participants expressed strong confidence in their providers' expertise, describing them as the primary authority on hypertension management and education. In the Jaafar et al. (2020) study, some participants preferred teaching from doctors, as they deemed them more knowledgeable than nurses, whereas others preferred education from nurses, as they were more approachable and provided greater continuity of care than doctors. In this study, participants did not seem to prefer one cadre of healthcare providers over another, but they did show general trust in them.

This could be because primary care in Kenya is mainly provided by nurses and clinical officers, with nutritionists delivering health education messages on diet, and patients do not always differentiate which providers are delivering care. In the study by Jaafar et al. (2020), some participants were apprehensive about interacting with doctors and found them unapproachable due to high turnover, which limited continuity of care. This is

different from our setting, where most providers in primary care facilities are consistent and provide continuity of care, and their unapproachability may be due to time constraints, poor provider attitude, or inadequate training in health education practices.

Healthcare providers offered teaching mainly during clinical encounters, mostly individually and sometimes in group sessions, focusing on causes, management, and adherence strategies. However, limited consultation time and high patient volumes often constrained opportunities for detailed or continuous education. According to Correia et al. (2023), both group-based and individual teachings are equally practical in chronic disease management.

This is in contrast to Mustara et al. (2025), who found that individualised health education delivered over a shorter duration was more effective than group sessions over a longer duration in promoting medication adherence. This could be because individualised sessions are more context-specific and patient-centred, and may be buttressed by a good relationship between the patient and the educator. Group-based teaching is applied in our setting because it can reach many people at once, overcoming the time-consuming nature of individualised instruction, which can sometimes act as a barrier to education. Overall, it is prudent for providers to balance the individualised, patient-centred approach with the time-saving and peer-support aspects of group teaching.

Alongside formal facility-based education, community health promoters (CHPs) played a significant complementary role, reinforcing and extending the information provided by healthcare providers. Their ongoing engagement in the community enabled them to provide follow-up support, explain information more clearly, and make it relevant to patients' social and cultural circumstances. CHPs were particularly valued for their

accessibility and personalised approach, which strengthened understanding and adherence among patients who had limited interaction with health facilities. This corresponds to findings from Bush et al. (2023), who noted that community health workers played a key role in an SMBP program by helping patients with behaviour change, including home BP monitoring and medication adherence, as well as by facilitating understanding of information from health care providers.

A study on community health workers (CHWs) conducted in Kenya, however, revealed that CHWs faced challenges such as inadequate reimbursement and inconsistent training and equipment to carry out their roles. They also reported spending little time in the homes, therefore limiting their impact (Aseyo et al., 2018). Much as the study by Aseyo et al. (2017) was done before the Universal Health Coverage (UHC) reforms, where their role was changed from ‘community health worker’ to ‘community health promoter’, with more integration into the primary healthcare system presently, similar concerns over their reimbursement and training persist (Bwana, 2024). The role of community health promoters can be strengthened by county governments, in collaboration with the Ministry of Health, in addressing these barriers.

In this current study, when messages from CHPs and providers were consistent, they reinforced trust and improved adherence, reflecting an effective synergy between the formal health system and community-based education. However, some patients expressed concern over the confidentiality and accuracy of information provided by CHPs, consistent with observations by Bwana (2024), and underscoring the need for enhanced training and supervision (Bush et al., 2023), which is crucial in our setting due to an inadequate providers to meet patients’ health needs.

Informal peer educators also played a prominent role in supporting hypertension education at the community level. Many participants described learning from peers who shared similar experiences with hypertension management. These interactions fostered a sense of solidarity and mutual accountability, complementing the teachings from formal educators. Peer-led discussions and home visits helped reinforce behaviour change messages, enhance understanding, and provide emotional support, findings similar to those of Trigos-Carillo et al. (2025), who highlighted the value of informal community educators in chronic disease management. Peer education appears to play a prominent role in this study, as people in rural areas such as Bomet County live in close-knit communities and share their experiences. This provides an opportunity to enhance awareness and prevention of hypertension at the community level through peer support groups and peer-led education.

Ranjbar et al. (2024) found that peer education was more cost-effective than routine education in promoting medication adherence among elderly patients living with hypertension. In Thompson et al. (2025)'s systematic review on peer support for chronic conditions, findings were that the effectiveness of peer support was inconsistent and unclear. The studies included were mostly from Western and Asian countries, with limited studies from Africa, where social systems may differ from those in our country, where social systems in rural and semi-urban areas are strong. Several interventions in the studies were also delivered by telephone, unlike in our setting, where interactions tend to be more in-person, fostering stronger interpersonal connections and providing more communication cues. In our study, patients valued the social support and education they received from their peers. However, some doubted the information that conflicted with that provided by healthcare practitioners. Peer education remains a potentially

valuable and cost-effective means of education that can be formalised to improve hypertension care.

Mass media platforms, particularly radio programs, served as an additional but less interactive avenue for health education. Participants noted that these radio sessions were often facilitated by healthcare providers and used to disseminate general information on hypertension prevention, adherence to treatment, and lifestyle modification. In the study by Trigos-Carillo et al. (2025), participants reported benefitting from television programs featuring healthcare specialists who offered relevant, easy-to-understand information. While valued for their broad reach, language appropriateness, and reinforcement of key messages, such programs lack opportunities for dialogue and contextualisation. On the other hand, community group sessions, usually organised by CHPs and occasionally supported by HCPs, offered more interactive forums that allowed participants to ask questions, share experiences, and relate information to their lived realities. Healthcare providers can continue to engage mass media platforms to expand their reach and improve general awareness of hypertension prevention and management strategies.

Despite their trust in healthcare providers, participants noted that time constraints and high patient volumes limited opportunities for in-depth education. This echoes findings by Roussel and Franey (2023), who observed that limited provider time reduces opportunities for dialogue, follow-up, and contextualisation of information. In contrast, CHPs, peer educators, and community-based initiatives were able to provide more continuous and personalised education. These complementary sources effectively bridged the gap between health systems and households, ensuring that hypertension education was both constant and contextually relevant.

Overall, the findings indicate that the most effective hypertension education occurs when healthcare providers lead the educational process, community health promoters sustain and contextualise it, and peer educators reinforce it through shared experiences. Health education is strengthened when clinical accuracy is paired with culturally relevant, consistent, and continuous reinforcement at the community level. This blended, multi-channel approach offers a pathway for more equitable and sustainable patient education, particularly in rural primary care contexts where access to healthcare professionals is limited.

4.4.3 Objective 3: Patients' Perceived Factors Shaping Hypertension Education in Bomet County's Primary Care Settings

Participants identified a range of personal, interpersonal, organisational, community, and public policy factors shaping hypertension education and adherence. At the individual level, patients' perceptions of the usefulness and practicality of the advice influenced their adherence. Most viewed hypertension as controllable and expressed self-efficacy in managing it, a finding consistent with Niksadat et al. (2023), who noted that perceived practicality strengthens educational adherence. Most participants were motivated to adhere to the education to improve their health, despite at times limited understanding of the condition, consistent with Trigos-Carrillo et al. 's (2023) findings. This could mainly be due to the sense of agency participants have regarding their health, influenced by the belief that their actions affect their health outcomes, unlike in cultures with a more fatalistic outlook.

However, a few participants reported fatalistic attitudes and fear of complications, which either motivated or hindered engagement. In Trigos-Carrillo et al. (2025)'s study, some participants were motivated by fear of complications to adhere to the education. In

contrast, in our study, fear of complications led some participants to avoid education. This may be due to education not being routinely incorporated into care, so a patient may think they are being educated when their condition worsens. This further emphasises the need to integrate routine patient education into patient care as part of standard management, not only when patients are experiencing worsening clinical outcomes.

At the interpersonal level, trust in healthcare providers and CHPs significantly influenced engagement with education. Where relationships were positive and providers were approachable, patients reported better understanding and greater motivation to adhere, consistent with Roussel and Franey's (2023) observations. These interactions mattered not only because information was shared, but because patients felt respected and valued, conditions that naturally make them more willing to embrace the guidance offered. Conversely, perceived provider unwillingness or rushed consultations discouraged participation. This pattern mirrors findings from Edward et al. (2021), who conducted a qualitative study in Tanzania and identified limited time for counselling as a barrier to medication adherence.

At the organisational level, participants linked the variability in education to the facility context; some associated public or private facilities with better follow-up, while others associated them with minimal or inconsistent education. This is consistent with Trigos-Carillo et al. (2025), who found that continuity of care enables more meaningful patient education. Taken together, these findings suggest that the challenges observed are not limited to individual provider behaviour but are shaped by broader structural conditions within facilities. Participants in the current study emphasised the need for structured, standardised educational programmes to reduce discrepancies across facilities and ensure that patients receive consistent information regardless of where they seek care. The time

constraints perceived by providers were also described as an organisational barrier, arising from long queues and low provider-patient ratios, a challenge similarly noted by Trigos-Carillo et al. Such patterns indicate that strengthening patient education requires attention to system-level factors that influence how education is delivered in routine care.

At the community level, cultural acceptance of hypertension and collective experiences shaped receptivity to education. Community outreach initiatives by CHPs were praised for contextualising information and overcoming access barriers, consistent with Roussel & Franey (2023). Participants recommended expanding such outreach to reach marginalised populations. This will be in keeping with Khanal et al. (2021), who found that community-oriented training improved hypertension knowledge and reduced blood pressure among residents of Nepal. Community engagements in Kenya, however, have faced barriers, such as the lack of empowerment of CHPs, which limit their reach (Aseyo et al., 2018; Bwana, 2024). In the current study, community health promoters appeared to play an active and important role in patient education and should be fully supported through training, follow-up, and reimbursement to ensure their input is sustained. This is a crucial factor in the rural Kenyan setting, where community bonds are strongly valued and upheld, reinforcing the need for continued community engagement to improve healthcare delivery.

Finally, at the policy level, the significant variability in patients' educational experiences points to a lack of a uniform, structured education guideline for nationwide use. The Ministry of Health's national guidelines for cardiovascular disease can be improved by including a comprehensive, structured hypertension education guide that can be implemented uniformly by all providers and educators. This will be similar to other ministries of health guidelines, which include standard educational packages on

hypertension to ensure comprehensive information is provided to patients (Ranjbar et al., 2024). Additionally, financial barriers and drug stockouts emerged as the most significant obstacles to adhering to education. Participants reported difficulty purchasing medications due to health insurance limitations, a finding echoed by Bamuya et al. (2021) and Niksadat et al. (2023), who emphasised the importance of addressing socioeconomic barriers alongside patient education.

Using the Social Ecological Model (SEM) lens, this study demonstrates that patients' experiences of hypertension education are shaped by interacting factors across multiple levels, as seen above. Together, these layers determine patients' engagement with hypertension education by accounting for the various factors that influence this experience. Strengthening hypertension education, therefore, requires multi-level interventions that extend beyond individual knowledge to address the broader social, institutional, and policy environment.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains a summary of the research findings, the conclusion, policy recommendations, and recommendations for future studies.

5.2 Summary of the Major Findings

The study's significant findings are outlined below, in line with the research objectives and research questions it addressed.

5.2.1 Patient Experiences regarding hypertension Education

Adult patients with hypertension had varied experiences of being educated on hypertension, including understanding the causes, symptoms, complications, and treatment of hypertension. Some were taught at the point of diagnosis and continued to receive teaching during their follow-up. In contrast, others received little formal teaching from healthcare providers and relied on informal health education. They were taught on both pharmacologic and non-pharmacologic management of hypertension, with most pharmacologic education majoring on medication adherence, with little information on medication action and side effects. Non-pharmacologic education included lifestyle modifications such as salt reduction, solid fat reduction, and a heavy emphasis on water intake, which were seen as means to control high blood pressure. Other lifestyle modifications included stress reduction, exercise, and reduced alcohol intake, some of which were deemed practical while others were considered impractical. Some information received was accurate and sufficient, while some was inaccurate or insufficient.

5.2.2 Sources and formats of hypertension Education

Patients with hypertension were taught in formal and informal settings. They received education and counselling from healthcare providers in healthcare facilities, community health promoters, and peers in the community. Providers also utilised informal platforms such as church meetings and community gatherings to teach patients. Community health promoters were an essential source of information as they lived with the patients in the community. Audiovisual sources, such as the radio, and print media, such as books, also augmented the teachings they received.

5.2.3 Perceived Factors Associated with Hypertension Education

Patients perceived the education they received to be affected by various factors. Most patients were willing to learn and adhere to the teachings as they desired to improve their health. Fear and apprehension about the complications could hinder patient teaching and learning. A good relationship with educators facilitated teaching, whereas busy provider schedules and provider unwillingness to engage patients were barriers to health education. The language the provider used could enhance or hinder communication, depending on its understandability. Some providers presumed that patients already knew about HTN and therefore did not bother to teach them. Financial constraints were a significant barrier to patients' adherence to the education they received.

5.3 Conclusion

In conclusion, patients living with hypertension have varied experiences regarding health education, ranging from frequent, consistent, accurate, and sufficient information to inadequate, infrequent, and inaccurate information. They generally received details on understanding the illness, medication adherence, and lifestyle modifications, including dietary adjustments, stress reduction, and exercise. Counsel on medication adherence

seemed appropriate and cannot be overemphasised. In contrast, some aspects of lifestyle modification were over-emphasised, despite not being standard lifestyle modification measures as outlined in the Kenya National guidelines (MOH, 2024). The education seemed to be generally easy to understand and apply for most patients. Healthcare providers and community health promoters were the primary sources of information, with informal peer educators supplementing the teaching by sharing their own experiences.

The content and quality of education varied greatly. They were influenced by various factors, such as the source of the information, trust and relationships between patients and health education providers, and patients' and providers' attitudes and availability. The patient's attitude and self-efficacy facilitated adherence to the counsel, but were hindered primarily by financial and accessibility constraints. Community engagement is a key tool for health education, and there is a need for greater efforts to standardise teaching practices and harness community resources to facilitate more efficient and effective health education.

5.4 Recommendations

This section contains policy recommendations as well as recommendations for future research

5.4.1 Policy Recommendations

The Ministry of Health, through the Kenya National Guidelines on Cardiovascular Disease Management, recommends that hypertension education, including medication adherence and lifestyle modification, take place at every clinic visit. Based on this study's findings, I recommend that a comprehensive, structured, standardised, and easy-to-use teaching guide for hypertension be incorporated into the national guidelines to

foster the delivery of clinically accurate, effective, and efficient patient education for all healthcare providers. Given patients' varied experiences with education quality and provider engagement, patient education training can also be included in health care providers' training curricula, exploring approaches such as motivational interviewing and following the principles of adult learning to strengthen patient communication practices.

Health educators, particularly peer educators, can also be trained and deployed to healthcare facilities to augment education services, as they have more time with patients to teach them specifically and relate to them based on their personal experiences. Incorporating peer educators can also be a cost-effective strategy to deliver information and enhance adherence to management, and can overcome the time-constraints barrier identified in this study.

Participants suggested that doctors use structured curricula to guide patient education. Providing simplified printed or audio-visual materials would support understanding, stimulate discussion, and reinforce key messages. Integrating these tools into routine care, including during waiting times, and engaging patient educators alongside providers could enhance learning and ensure consistent, patient-centred education.

At the community level, participants highlighted the value of health promoters' community outreach in making hypertension education accessible and contextually relevant. Expanding these activities through existing community health units, improving CHP training, and pairing CHPs with peer educators could strengthen the reach and relatability of health messages, particularly for marginalised populations.

Despite appropriate education given in some instances, participants reported that the limited availability of medications in public facilities and constraints under social health

insurance hindered adherence to prescribed treatment. Ensuring a consistent supply of drugs should be a priority for the Ministry of Health to support adequate adherence and reduce the risk of cardiovascular complications.

5.4.2 Recommendations for Future Research

This study explored patients' experiences regarding hypertension education and their perception of associated factors. Future research could build on this study by exploring healthcare providers' experiences with hypertension education, including their knowledge, preparedness, and perceived barriers. Understanding providers' perspectives would complement patient-focused insights and identify gaps in the delivery of structured, patient-centred education. Interventional studies could assess the effectiveness of structured hypertension education packages incorporating standardised curricula and simplified materials on patient knowledge, adherence, and clinical outcomes in local primary care settings.

Additionally, research examining the role of peer educators and community health promoters in augmenting facility-based education would provide evidence on strategies to enhance patient understanding and adherence, reflecting the emphasis participants placed on relatable, ongoing support. Finally, community-level studies could investigate contextual factors influencing patient engagement in hypertension education, such as cultural beliefs, peer influences, and access to resources, thereby addressing gaps not fully captured in this study's facility-based interviews.

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APPENDICES

Appendix I: Adult Informed Consent Form

STUDY TITLE: Exploring Patient Education Experiences and Perceived Influencing Factors Among Adults with Hypertension in Bomet County's Primary Care Setting in Kenya.

PI _____

Affiliated Institution _____

Co-investigator(s) _____

Affiliated Institution(s) _____

Introduction

You are invited to participate in this research study being undertaken by the above-listed investigators. This form will help you gather information about the study so you can decide whether to participate voluntarily. You are encouraged to ask any questions regarding the research process, as well as any benefits or risks that you may accrue by participating. After you have been adequately informed about the study, you will be requested to either agree or decline to participate. Upon agreeing to participate in the study, you will be further asked to affirm that by appending your signature/thumbprint on this form. Accepting or declining to participate in this study does not in any way waive the following rights, which you're entitled to:

- a) Voluntary participation in the study;
- b) Withdrawing from the study at any time without the obligation of having to explain and;
- c) Access to services which you're entitled to

A copy of this form will be provided to you for your own records

Should I continue YES/NO _____

This study has been reviewed and approved by Kabarak University Research Ethics Committee (KUREC) and the Tenwek Hospital Institutional Scientific and Ethics Review Committee (ISERC).

What is the Purpose of the Study?

The main reason(s) for conducting this study are to answer the following questions:

- i. What are the lived experiences of patients living with hypertension regarding health education in Bomet County's primary care settings?
- ii. Which education sources and formats do patients living with hypertension encounter in Bomet County's primary care settings?
- iii. What factors do patients identify as shaping their hypertension education in Bomet County's primary care settings?

(To answer these research questions, you are requested to answer question(s) voluntarily and/or accept some procedures performed on you.)

Who Can Take Part in the Study?

Adults aged 18-69 years who have been diagnosed with hypertension at least 3 months before this study can participate. Those unable to communicate, those who are unstable requiring urgent medical attention, and those with established cognitive disorders or those unable to speak shall be excluded.

This study shall target 10 participants for the in-depth interviews and 4 focus group discussions of 5-10 participants each.

In Case You Agree to Participate in the Study, What Will Happen?

This is what is going to happen once you have agreed to participate in the study:

First, this interview may take 30-120 minutes/ 60-120 minutes for focus discussion groups

Second, a qualified, well-trained interviewer will ask you questions in a private place where you feel comfortable. In case there is any question you feel uncomfortable

responding to, you will not be coerced into responding. The questions will be on the following areas:

- i) Your experience of patient education in the primary care settings in Bomet County
- ii) Your perception of the factors that affect patient education in the primary care setting in Bomet County.

- Third, after the interview, the following procedures will be done:

The recorded information will be transcribed and coded to de-identify the participants, and then analysed into themes. Direct quotes will be used during data reporting.

- Last, you are requested to provide your contact details (phone number or any other reliable form of contact). This will help reach you in case new information regarding the study emerges.

- The contact details you will provide shall remain confidential to the lead researcher (PI).

What Potential Risks are Associated with Participation in this Study?

Any research involving human subjects has the potential to impose several risks/harms or discomforts, including psychological, physical, emotional, environmental, and cultural. If you feel uncomfortable with the research process at any point, you have the right to quit. If you have any further questions about this research, you can contact the principal investigator at 0712 142 361. If you feel that any of your rights have been violated in the process of the study, please get in touch with Tenwek ISERC at ierc@tenwekhosp.org

Privacy & Confidentiality

Privacy is the right of an individual to control how their personal information/data is collected, used, and/or disclosed. Confidentiality is the duty to ensure information (data) is kept secret only to the extent possible/reasonable.

Your confidentiality will be upheld by distorting your voice and coding your identification details during transcription to de-identify the information. The data will be stored on a password-protected device accessible only to the principal researcher and research assistant. The data will be stored for a maximum of 5 years, after which it shall be destroyed.

In case you aren't comfortable answering any of the questions during the interview because of feeling embarrassed or uncomfortable, it will be within your rights to decline. Otherwise, every measure has been taken to ensure the interview is conducted in a private area with minimal to no interference, so you feel comfortable.

What Benefits are you going to accrue by participating in the Study?

The findings of this study will help identify possible gaps in health education delivery in the primary care setting in Bomet County. The information will be shared with facilities, the Ministry of Health, and other relevant stakeholders to address gaps and, therefore, improve hypertension education, contributing to better hypertension care in the County.

What Will it Cost You to Participate in the Study?

Participating in the study will not cost you anything.

Will Any Expenditure that You Incur by Participating in the Study be Refunded?

If a different day is chosen for the interview, the fare used will be reimbursed.

In Case I have any Further Questions/Concerns in the Future, Whom Should I contact?

If you need further clarification or have any questions regarding your continued participation in the study, feel free to contact the PI at {0712 142 361}. In case of concerns regarding your rights and/or obligations as a research participant, do not hesitate to contact the secretary, KUREC on {0729 223 370} or Tenwek ISERC at ierc@tenwekhosp.org

Idhini Baada Ya Maelezo Kwa Watu Wazima

MADA YA UCHUNGUZI: Elimu Wanayopitia Wagonjwa wa Shinikizo la Damu na Maoni Kuhusu Mambo Yanayo husiana nayo Katika Mfumo wa Matibabu ya Kimsingi Katika Kaunti Ya Bomet, Kenya.

Mchunguzi mkuu: _____

Taasisi-husika _____

Wachunguzi Wenzi _____

Taasisi-husika _____

Utangulizi

Unaalikwa kushiriki katika utafiti wa ki-uchunguzi unaofanywa na wachunguzi walio orodheshwa hapo juu. Fomu hii itakusaidia kukusanya taarifa zinazohusiana na uchunguzi ili uweze, kwa hiari yako, kuamua iwapo ungetaka kushiriki au la. Unahimizwa kuuliza maswali yote kuhusiana na mchakato wa uchunguzi huu, kukiwemo manufaa na hatari zinazotokana na kushiriki kwako. Baada ya kuarifiwa ipasavyo kuhusu uchunguzi wenyewe, utaombwa kukubali au kukataa kushiriki. Ukisha kubali kushiriki kwenye uchunguzi, utaombwa tena kuthibitisha kibali chako kwa kuweka sahihi yako/muhuri wa kidole gumba kwenye fomu. Kukubali au kukataa kushiriki katika uchunguzi huu hakutaathiri kwa namna yoyote haki zifuatazo za msingi kwako:

- . Kushiriki kwa hiari kwenye uchunguzi;
- a. Kujiondoa kwenye ushiriki bila kuhitajika kutoa maelezo na;
- b. Kupata huduma ambazo ni haki yako kupewa

Utapewa nakala ya fomu hii ili uwe nayo katika rekodi yako

Je, niendele? NDIO/LA _____

Utafiti huu umekubaliwa na Kamati ya Taasisi ya Hospitali ya Tenwek, inayopitia na kuhakikisha uzingatiaji wa Sayansi na Maadili kwenye Utafiti (ISERC) .

Je, ni Nini Madhumuni ya Uchunguzi?

Sababu kuu ya kufanya uchunguzi huu ni kupata majibu ya maswali yafuatayo:

- Je, ni mambo gani ambayo watu walio na shinikizo la damu wamepitia kuhusiana na elimu ya kiafya kwenye taasisi za ki-msingi za afya katika kaunti ya Bomet
- Je, watu walio na shinikizo la damu wanapata elimu za kiafya kupitia mbinu na nyenzo gani?
- Ni mambo gani ambayo wagonjwa wanaona kuwa ndiyo yanachangia kuwaelimisha kuhusu shinikizo la damu katika vituo vya afya ya msingi vya Kaunti ya Bomet?

(Ili uweze kuyajibu haya maswali ya utafiti, unaombwa kuyajibu kwa hiari)

Je, ni Nani Anayepaswa Kushiriki Katika Utafiti?

Watu wazima walio na umri wa miaka 18-69 na ambao wamethibitishwa kuwa na ugonjwa wa shinikizo la damu miezi mitatu kabla ya utafiti huu wanaweza kushiriki. Wale wasioweza kuwasiliana, wasio thabiti kiafya na kuhitaji matibabu ya dharura ama waliothibitishwa kukosa uthabiti wa kiakili hawatajumuishwa katika kushiriki. Uchunguzi huu unalenga watu 10 ambao watahojiwa ki-undani na vikundi 4 vya kujadiliana, kila kikundi kikiwa na washiriki 10.

Endapo Utaamua Kushiriki Katika Uchunguzi Huu, Itatokea Nini?

Hiki ndicho kitakachotokea ukiamua kushiriki katika uchunguzi huu:

- . Kwanza mahojiano haya yatachukua muda wa dakika 30 hadi 120 kwa mahojiano ya kindani na dakika 60 hadi 120 za vile vikundi 4 vya majadiliano.
- a. Pili, mhoji, aliyepata mafunzo na kuhitimu, atakuhoji kwa maswali ya faraghani katika mahali utakapohisi salama. Iwapo kuna swali ambalo hulihisi kuwa sawa kwako kujibu, hutalazimishwa kulijibu. Maswali yatalenga sehemu kama zifuatazo:
 - . Uliyoweza kupitia kuhusu kuelimishwa kama mgonjwa katika vituo vya kimsingi vya afya katika kaunti ya Bomet.
 - i. Namna unavyoona mambo yanayoathiri kuwaelimisha wagonjwa katika vituo vya kimsingi vya afya katika kaunti ya Bomet.
 - c. Tatu, baada ya mahojiano, taratibu zifuatazo zitatekelezwa:

- Taarifa zilizorekodiwa zitanukuliwa moja kwa moja na kuwekwa katika mbinu fiche ili kusitiri mhusika, kisha zichambuliwe kuwa maudhui. Nukuu za moja kwa moja zitatumwa wakati wa kutoa data au tafsili.
- Mwisho kabisa, utaombwa kutoa nambari yako ya simu au namna yoyote ya kuwasiliana nawe. Hii itasaidia kuweza kuwasiliana nawe iwapo habari mpya inayohusiana na utafiti itaibuka. Mbinu zo zote za mawasiliano utakayotoa zitahifadhiwa na yule mtafiti mkuu kwa usiri.

Ni Hatari Zipi Zinazohusiana na Kushiriki Katika Utafiti Huu

Ingawa hakuna madhara ya moja kwa moja ambayo yanahusiana na kushiriki katika utafiti huu, kunaweza kutokea madhara yanayohusiana na kutumia muda mwingi katika kituo. Hatua zitachukuliwa, hata hivyo, kuhakikisha kwamba hatucheleweshi huduma zako na kwamba mahojiano yako yataenda kwa njia ya upesi iwezekanavyo. Ikiwa utakuwa na maswali zaidi kuhusiana na utafiti, wasiliana na mchunguzi mkuu kwa nambari 0712 142 361. Ikiwa unahisi kwamba haki zako za msingi zimehujumiwa katika mchakato wa utafiti, tafadhali wasiliana na ISERC ya Tenwek kwenye barua pepe ierc@tenwekhosp.org

Faragha na Uhifadhi wa Siri

Faragha ni haki ya mtu kuwa na udhibiti wa namna ambavyo habari yake ya kibinafsi na tafsili zinazotokana na habari hizo zitakavyofichuliwa. Usiri ni jukumu la kuhakikisha kwamba habari na tafsili yake (data) zinahifadhiwa kwa fiche kwa kiasi kinachowezekana.

Usiri wako utahakikishwa kwa namna ya kuivuruga sauti yako iliyonakiliwa na kufichwa kwa taarifa yo yote uliyotoa kuhusu nafsi yako wakati wa kuhojiwa kwa kutenganisha wewe na taarifa hiyo. Tafsili ya habari uliyoitoe itahifadhiwa kwa tarakilishi iliyo na *нено-siri*, ambayo inaweza kufikiwa tu na mtafiti mkuu na msaidizi wake. Habari hizi zitahifadhiwa kwa usiri huo kwa urefu wa muda wa miaka 5 na baada ya hiyo itaondolewa.

Endapo huhisi sawa kujibu swali lo lote wakati wa mahojiano kwa sababu ya fedheha, utakuwa na haki kukataa kulijibu. Hata hivyo, kila hatua imechukuliwa kuhakikisha

kwamba mahojiano yametekelezwa katika mazingira ya faragha, huku kukiwa na uingiliaji nadra au bila kuingiliwa kamwe ili uwe na starehe.

Ni Manufaa Gani ambazo Utapata Kutokana na Kushiriki Katika Utafiti Huu?

Majibu yatakayotokea kwa utafiti huu yatakuwa na manufaa kwa kusaidia kutambua mapengo yaliyopo katika utoaji wa elimu kwa wagonjwa katika vituo vya kimsingi vya afya katika kaunti ya Bomet. Taarifa hiyo itasambazwa kwenye vituo vya afya, Wizara ya Afya na washika dau mbalimbali ili kuziba pengo na kuimarisha elimu ya kiafya kuhusu shinikizo la damu, na hivyo basi kuboresha huduma ya shinikizo la damu.

Je, Itakugharimu Nini Kushiriki Katika Uchunguzi Huu?

Haitakugharimu cho chote kushiriki kwenye utafiti huu.

Je, Utarejeshewa Gharama Yo Yote Utakayoingia Katika Utafiti?

Ikiwa siku tofauti itachaguliwa kwa mahojiano, utalipiwa kikamilifu nauli ya kusafiri kuja kwenye kituo chetu.

Je, Nikiwa na Maswali Zaidi au Jambo la Kunitatiza Katika Siku Zijazo, Niwasiliane na Nani?

Ikitokea kwamba unahitaji ufafanuzi zaidi au una maswali kuhusu kuendelea kushiriki katika uchunguzi huu, uwe huru kuwasiliana na mchunguzi mkuu (0712 142 361). Iwapo una mashaka kuhusu haki zako na majukumu yako kama mshiriki wa utafiti, usisite kuwasiliana na Kamati ya ISERC ierc@tenwekhosp.org

Nina Njia Zipi Nyinginezo Mbadala Kwangu?

Uamuzi kushiriki au kutoshiriki ni hiari yako kabisa. Uko huru kujiondoa kutoka utafiti huu katika awamu yo yote ya uchunguzi bila kuhitajika kutoa maelezo.

Je, Matokeo ya Utafiti Yatawasilishwa Kwa Njia Gani?

Matokeo ya utafiti yatawasilishwa kupitia kwa Wahudumu wa Afya ya Kijamii au kupitia msimamizi wa kituo cha afya ambapo ulitoa idhini yako kushiriki.

Kauli Ya Idhini

Nimesoma fomu ya kutoa idhini kwa kina au nimesomewa na mchunguzi taarifa iliyomo kwa kina. Nimeelewa kinachokusudiwa katika uchunguzi nayo maswali na mashaka yote niliyokuwa nayo yameshughulikiwa kwa njia wazi ya kueleweka. Manufaa na madhara yanayoweza kutokea kwa utafiti nayo nimeelezwa. Naelewa fika kwamba kushiriki kwangu katika uchunguzi huu ni kwa hiari na kwamba nina uhuru kujiondoa katika awamu yo yote kwenye mchakato wa uchunguzi. Ninakubali kwa hiari yangu kushiriki katika uchunguzi huu.

Kuweka sahihi kwa fomu hii haimaanishi kwamba nimepoteza haki ninazostahili kuwa nazo.

Ninakubali kushiriki katika utafiti huu NDIO _____ LA _____

Ninakubali kutoa anwani za kunifikia NDIO _____ LA _____

Jina la Mshiriki _____

Sahihi/Muhuri wa kidole gumba _____ Tarehe

CHAMJINET KO KAKIGUIYECHI BIK CHE EECHEEN

METITAB CHIGILISIET: Konetisiet Ne Bunei Bik che Tinye Rwaetab Korotik ak Ole Kigeertoi Tuguk Che Namegei ak Noton en Ketesiosiek Che Tai chebo Kanyoiset en Kaunti nebo Bomet, Kenya

Chigilindet Ne O _____

Ole Kiyaen Chigilisiet _____

Che Toreti ge ak Chigilindet _____

Oldinwek alak che mi Kibagenge _____

TAUNET

Kagitaachin ichutu iegu agenge en kinisiet ne yae chigilik che kagisir en barak yu. Toretin fomini iyum ak inai ng'alek che namegei ak chigilisioni asi imuch itil en chameng'ung' ngot imache ichutu anan achicha. Kigiilin anyun iteeb teebutik che namegei ak tesetab tai nebo chigilisioni, ak imuch inai keljinet ak ng'oiyondit ne biitunen kechut chigilisioniton. Ye kaginaiisiin komie agobo chigilisioniton, kesomin anyun iyan anan iesie ichutu chigilisiet. Ye kaiyan ichutu ko ta kesomin kogeny iyan en kandeetab sein anan chiiletat siiyet en fomit. Chamet anan eesioet ko maeetenen tuguchu isubu che nyoljinin:

- . Chutunetab chigilisioni ko en chameng'ung';
- a. Istoetab ge en kasar age tugul ko magimagenen igonu amunee;
- b. Inyoru toretetab kotugul ne nyoljinin.

Ngwany ates tai? EE/ACHICHA _____

Kigogeer chigilisioni ak kosiirto komitii nebo Tenwek Hospital, ne keere kole kagisub en chigilisiet age tugul musoknatet ak atepto ne chamat (ISERC).

Tokyingei nee Chigilsioni?

Amunee neo asi keyai chigilisioni ko asi kenyor wolutikab teebutichu:

- . Tos nee tuguk che kigobun bik ch tinye kaimutietab rwaetab korotik konamgei ak konetisiet en ketesiosiek che tai chebo kanyoiset en kaunti nebo Bomet?
- i. Tos konetisiet ainon ak tugun nee che keboisien en konetisiet ne kinteten bik che tinye kaimutietab rwaetab korotik en ketesiosiek che tai che bo kanyoiset en kaunti nebo Bomet?
- ii. Tos nee tuguk che imuche kong'werer bik che tinye kaimutietab rwaetab korotik, che igochin icheget kaguiyet agobo kaimutionoton en ketesiosiek che tai che bo kanyoiset en kaunti nebo Bomet?

(Asi imuch iwolu teebutikab chigilisioni ko nyoljinin iegu ne itiagat iwolu en chameng'ung')

Tos Ng'o ne Imuchi Kochut Chigilisioni?

Bik tugul che eechen chebo kenysisiek 18-69, che kigenyorchi kotinye miondab rwaetab korotik en kenysisiek somok kotom ketoi chigilisioni che kechamjin kochut. Bik che ma imuchi kong'alal anan che ma kimen en chametab ge nebo borto, che nyoljin kesusuiyen en chokyinet en kanyoiset, anan chon che ma terektaiotin komie kabwatutik, ko magichamjin kochut chigilisioniton.

Tokyingei chigilisioniton koityi bik 10 che kiteebesen komie ak kurupisiek 4 chebo bik che iityindos che tinye age tugul bik 5-10, che imuchi kong'alaljin.

Ye Kaiyan Ichutu, Ko Yaakse Nee?

Yaakse kou ni ye kaiyan ichutu chigilisiet:

- . Ne tai, imuchi teebset koib dakikosiek 30-120 en teebset ne kibendi orit komie ak 60-120 chebo kurupisiechugan.
- a. Nebo oeng, ko teebsenen chito ne ineetab ne kigoyanak komie, en teebutik en ole omi okwegen asi kobiit igas ko itiagat. Nda mi teebut ne megase ko itiagat iwolu, ko maigiikinyinin chi iwolu. Mi teebutik en kebeberwek che isubu:
- . Tuguk che kiibunu konamgei ak konetisietab ko i chi ne tinye kaimutietab borto en ketesiosiek che tai chebo kanyoiset en kaunti nebo Bomet.

- i. Ole igeertoi tuguk che tiinyegei ak konetisietab bik che iime borwek en ketesiosiek che tai chebo kanyoiset en kaunti nebo Bomet.
- c. Ne bo somok, ye kagobata teebset keyae tuguk che isubu:
 - Ng'alek che ko kagita anan kerekoden kebendi kesire kou ye kang'alaldoi chito kobaten kiistoi kainetab chito ne kang'alale ak kepcheiapchei koek tuguk che teerchin che mi en ng'alalanoton. Betut ne kigonu ripot kemwae ng'alek kou ye kong'alaldoi chito.
 - Ne bo let kesomin igonu nambaing'ung' ne kiityinen en simoit anan or age tugul. Toreti niton kimuch kenyorun nda wendi kot kobiit ng'olyon ne katesak konamgei ak chigilisiet. Nambaisiechoton, che kegonu, keribei en ung'ot ko namdoi ge chigilindet ne o.

Tos Nee Ng'oiyondisiek che Namegei ak Kechut Chigilisioni?

Mami ng'oiyondit ne imuche kele kabiit konamgei ak teebosiek, kobate abere imuchi kityo iib saisiek che katesak en ketesiet. Agot ngandan u non ketyeme kegeer kele mabiit kagaetab ge ak kachaakta teebset en or age tugul ne imuugakse. Nda iwendi kot igas ko maimuchi ites tai en chigilisiet en kasar age tugul, itinye imandang'ung' iistegei. Ngot ko ta itinye teebutik alak konamgei ak chigilisiet imuchi inyoru chigilindet ne o en nambait 0712 142 361. Nda igase ile kogiimin en imandang'ung' ye kon kotese tai chigilisiet imuche iityi Tenwek ISERC en e-mail nenyuan; ierc@tenwekhosp.org

KAENETAB KONG' AK RIBETAB UNG'OT

Kaenetab kong' (privacy) ko kagochinetab chi kobo ole kimong'undoit ng'alekyik, ole kiboisioitoi ng'alechoton ak ng'o ne nyolu keng'aang'ji. Riibetab ung'utik ko boisiet kogeer chito ne kageng'aang'ji ng'alek korib ng'alechoton en oret age tugul ne imuugakse.

Ung'utieng'ung' keribe en waletab tugeng'ung' ne ko kagita ak waletab kaineng'ung' ak nambaisiek che ko kegonu yon kibendi kesire. Kibestos kaineng'ung' ak ng'alek che kemwa ak kerib tuguk che sirotin en kompyuta ne kiyaaten ng'olyot nebo ung'ot. Ityin kompyutainoton chigilindet neo ak toretindeniyin ichegen. Tuguchoton kaginyor en chigilisiet kegonori kou noton en kasartab kenysisiek 5, yeityo keisto.

Nda igase ile memache iwolu teebut age tugul yon tesetai teebset amun konu kalilinet teebutionoton, imuchi ieesie iwolu. Ani buch ketyeme kegeer kele kagiteebesen en ole teegunot ole mami chutyinet age tugul asi igas imi en tagurnat.

Tos Nee Keljinet Ne Inyuru Konamegi ak Ichutu Chigilisioni?

Wolutik che mong'u en chigilisioni ko toreti kenai ole mi seng'ertet en konetisietab chametab ge en ketesiosiek che tai chebo kanyoiset en kaunti nebo Bomet. Kibendi kigoito ng'alechoton kamong' kigochin ketesiosiekab kanyoiset ak Ofisiesiekab Tililindo en emet ak bik tugul che namegei ak konetisietab ng'alekab chametab ge asi komuch koborien seng'ertet ne mi en konetisiet ne tiinyegei ak rwaetab korotik, si kabiit kogaigait ole keriptoi kaimutioniton en kaunti nebo Bomet.

Tos Nee Ne Keyaachin en Chigilisioni?

Mami kiy age tugul ne keyaachin ko kechutu chigilisioni.

Nda Wendi Kot Ichut Karamet Age Tugul Ne Kabiit En Chigilisioni Ko Tos Kiigerun-I?

Ngot kinde betut ne ter teebset ko rabiinik che kebunu inyone ketesiet kewegun tugul.

Ngot Kota Atinye Teebutik Alak Anan Tugun Che Agerechini Met En Betusiek Che Mi Tai, Ko Ng'o Ne Ateeben?

Ngot ko ta imache kiborseun komie anan itinye teebutik alak konamegi ak chigilisiet ko itiagat inyuru chigilindet neo (0712 142 361). Ngot konamegei teebutiguk ak imandang'ung' ak tuguk che nyoljinin iyai ko i chito ne kachut chigilisiet, ko meywei inyuru kamitii nebo Tenwek ne kile ISERC en e-mail ierc@tenwekhosp.org

Ara Ainon Oret Age Ne Atinye?

Tilet nebo ichutu anan komechutu chigilisiet ko tiienen gei. Itiagat kogeny en kasar age tugul ye tesetai chigilisiet iistegei ago ma kimagenen iaroru amunee

Ara Tun Kimoong'undoi Ano Wolutikab Chigilisioni?

Tun kimoong'u wolutikab chigilisioni kobun kiboitnikab tililindo che kigon gei en kwenutab emet, anan chito ne tononjin ketesietab kanyoiset, ole kigesiren ge ye kin iyani ichutu chigilisiet.

Mwaet nebo Kayanetab Achut Chigilisiet

Kaasoman komie fomini bo kayanetab chamjinet, anan kagosomanwon komie chigilindet. Kaaguiye kit ne tokyingei chigilisiet ak kagewolwon en oret ne katook komie teebutik tugul ak tuguk che kaiimen ge. Kagearorwon keljinet ne biitu en chigilisioni ak ng'oiyondisiek che imuuche kobiit. Aguitosi komie ale tiletab achut chigilisioni ko tiienonjei ak amuchi aistogei en kasar age tugul kotesetai chigilisiet. Kaagonu anyun kayanet en chamenyun achut chigilisioni.

Kandeenyun bo seiin anan chiilet ne kachiil en siiyet ko ma iboru kole kaalakte imandanyun nebo tuguk che nyoljinon.

Kaayan achut chigilisioni EE _____ ACHICHA _____

Kaayan agon nambainyun ne kimuche keityinenon EE _____ ACHICHA _____

Kainetab chito ne kachut chigilisiet _____

Seiin/chiiletab siiyet _____ Tarigit _____

Appendix II: Study Instruments

Interview Guide for In-Depth Interviews

I. Participant Characteristics

- a) Age (Years): _____
- b) Sex: _____
- c) Education Level (highest attained): _____
- d) Residence _____
- e) Blood pressure diagnosed (date/time period) _____
- f) Medications
- g) Blood pressure reading today

II. Experiences Regarding Patient Education

1. Can you tell me about your journey with hypertension—from your diagnosis to where you currently receive care? Were you informed about the causes, symptoms & complications of hypertension?

(To Capture: time and place of diagnosis, care facilities)

2. Have you received any advice or education on lifestyle changes or medication use to help manage your hypertension? What specifically were you told to do?
(Covers both pharmacologic and non-pharmacologic treatment education)

3. How was this information delivered to you, and who provided it?
(To Capture: format of information, source—healthcare workers, community members, media, etc.)

4. How helpful has the information been for managing your condition? Have you made any changes based on what you learned?

(To Capture: perceived benefit of education, behaviour change, self-management impact)

5. Was the information clear and culturally relevant to you? Is there anything you wish had been explained differently or in more detail?
(To Capture: understanding, clarity, cultural relevance, unmet needs)

6. Have you ever received conflicting information from different sources? If so, how did you deal with it?

(To gain depth in understanding information consistency and trust.)

7. Is there anything else you'd like to share about your experience with hypertension education?

III. Factors Affecting Hypertension Patient Education

1. What, in your opinion, enhances the giving of hypertension health education by healthcare providers/ from the healthcare system?
2. What, in your opinion, hinders the giving of hypertension health education by healthcare providers/ from the healthcare system?
3. What makes it easy for you to receive/understand the health education offered to you?
4. What makes it difficult for you to receive/understand the health education offered to you?
5. What recommendations would you make to improve patient education regarding hypertension from your providers/the healthcare system?

Interview Guide for Focus Group Discussion

No. of participants: _____

Introduction:

Welcome to this focus study group, and thank you for your participation. The interviewer will ask the questions. You are free to give your answers, but do not interrupt other participants. Audio recordings and documentation will be made for data analysis. Your names will not be attached to responses, and responses will remain confidential.

1. Do healthcare providers offer health education about hypertension when you are first diagnosed and during follow-up visits?

How frequently does this happen?

2. What kind of information do healthcare providers give you about hypertension and its management?
3. Is the information provided understandable and culturally relevant to patients?
4. Do you feel comfortable asking your healthcare providers questions about your condition? When you do, are the responses understandable and helpful?
5. Do providers give you information willingly, or do you usually have to ask? How would you describe their attitude toward giving health education, and has it helped you manage your hypertension better?

Interview Guide for Key Informants

Welcome to this interview. We would like to hear your experiences regarding offering hypertension education to your peers. Your name will not be attached to responses, and responses will remain confidential.

1. What has been your experience educating your peers about hypertension?
2. What motivates you to educate your fellow patients on hypertension?
3. Do you feel the healthcare system provides you with enough information to help in managing your condition well and in assisting other patients to do the same?
4. Are there things that help support your education provision to fellow patients?
5. Are there things that hinder your education provision to fellow patients?

VIFAA VYA UCHUNGUZI

Mwongozo wa Mahojiano ya Kina

I. Hulka Ya Mshiriki

- a) Umri (miaka) _____
- b) Jinsia _____
- c) Kiwango cha juu cha elimu _____
- d) Makao _____
- e) Thibitisho ya shinikizo la damu (tarehe na mwaka) _____
- f) Dawa na matibabu _____
- g) Vipimo vya shinikizo la damu leo _____

II. Yaliyopitiwa Kuhusu Kuelimishwa kwa Mgonjwa

1. Je waweza kuniambia kuhusu safari yako katika swala la shinikizo la damu – tangu kugunduliwa kwa shida hiyo hadi mahali unapopata matibabu yako sasa? Je, uliambiwa kuhusu vyanzo, dalili na matatizo ya shinikizo la damu?

(Ili kupata: wakati na mahali ilipothibitishwa shida na vituo vya matibabu)

2. Je, umepata ushauri na mafunzo kuhusu kubadilisha mtindo wa maisha au matumizi ya dawa ili kudhibiti shinikizo la damu? Ni nini hasa ulichoambiwa kufanya?

(Hii inajumuisha elimu ya ki-madawa na isiyohusu dawa).

3. Je, ulipewa taarifa hii ya elimu kwa mgonjwa kwa njia gani na ni nani aliyekupa habari hiyo?

(Ili kupata: maumbile ya taarifa, mbinu – wahudumu wa afya, wanajamii, vyombo vya habari, n.k.)

4. Je, taarifa hiyo imekusaidia kwa njia gani kuweza kuidhibiti hali yako?
Umefanya mabadiliko yo yote kutokana na kile ulichojifunza?

(Ili kupata kujua: manufaa ya kuelimishwa, mabadiliko ya mienendo, ilivyoathiri kujidhibiti)

5. Je, taarifa ilikuwa wazi na ya kuwiana na mila kwako? Je, kuna kitu ambacho unahisi kingeelezwa kwa njia tofauti au kwa kina zaidi?

(Ili kupata: u-wazi, wiano na mila na mahitaji ambayo hayajafikiwa).

6. Je, umepata taarifa kinzani kutoka kwa vyanzo tofauti? Ikiwa ni hivyo, uliipokea na kuishughulikia vipi?

(Kujua ufahamu wa kina kuhusu taarifa na uamini wa uimara wake).

7. Je, kuna jambo lingine ambalo ungetaka kuniambia kuhusu uliyoyapitia kwa elimu ya shinikizo la damu?

III. Mambo yanayoathiri Kuwaelimisha Wagonjwa wa Shinikizo la Damu

1. Kwa maoni yako, ni nini inayoimarisha zaidi elimu ya kiafya inayotolewa na wahudumu wa afya kutoka mfumo wa huduma ya afya?
2. Kwa maoni yako, ni kitu gani kinacho kwaza elimu ya kiafya inayotolewa na wahudumu wa afya kutoka mfumo wa huduma ya afya?
3. Ni kitu gani kinachorahisisha kwako upokeaji/ufahamu wa elimu ya afya unayopatiwa?
4. Ni kitu gani kinafanya kuwa ngumu kwako upokeaji/ufahamu wa elimu ya afya unayopatiwa?
5. Ni mapendekezo gani unayotoa kwa wahudumu wako wa afya na mfumo wa huduma ya afya ili kuimarisha elimu ya mgonjwa kuhusu shinikizo la damu?

Mwongozo wa Mahojiano kwa Watoaji Maalum wa Taarifa

Karibu kwa mahojiano haya. Tungetaka kusikia uliyopitia kuhusu utoaji elimu kwa wenzako wa shinikizo la damu. Jina lako halitaambatanishwa na majibu, na majibu yako yatahifadhiwa kwa usiri.

1. Je, ni yapi uliyoyapitia kwa kuwaelimisha wenzako kuhusu shinikizo la damu?
2. Je, ni nini kinachokupatia motisha ya kuwaelimisha wenzako kuhusu shinikizo la damu?
3. Je, unahisi kwamba mfumo wa afya unakupatia habari ya kutosha inayokusaidia kudhibiti hali yako vyema na kuwasaidia wagonjwa wengine vivyo hivyo?
4. Je, kuna mambo yanayosaidia kuimarisha utoaji wako wa elimu kwa wagonjwa wenzako?
5. Je, kuna vitu ambavyo vinalemaza utoaji wa elimu kwa wagonjwa wenzako?

KARIKAB CHIGILISIET

Kit Ne Kiboisien En Teebset Ne Kichute Orit

I.Ole u Chito Ne Kechigili

- a). Kenyisiestyik _____
- b) Muren/Kwony _____
- c). Ole Kiit en Somanenyin _____
- d). Meng'otenyin _____
- e). Tarigit ne kiginyorchin rwaetab korotik _____
- f). Kerichék che boisien _____
- g). Kit ne u bimanetab rwaetab korotik raini _____

II. Ole Kigobun En Konetisietab Chi ne Miani

1. Tos imwawon agobo bandang'ung' konamgei ak rwaetab korotik – kong'eten ko kaginyorchin mianoton agoi ole inyorunen ngunon kanyoiset. Ngwany kiga kimwaun agobo kit ne ibu, kaborunoik ak kaimutik chebo miondab rwaetab korotik-i?
(Asi kenam: kasarta ak olda ne kiginaen, ak ole kinyaen ngunon)
2. Tos kiinyoru katigonet anan konetisiet agobo ole nyolu iwalde ateptab sobeng'ung' anan kerichék che nyolu iboisien si igirinde miondab rwaetab korotik-i?
 - a. *(Tiinye niton konetisietab kanyaetab kerichék ak ne ma bo kerichék)*
3. Kigikonunden ano ng'alechu bo konetisietab chi ne mioni, ak ng'o ne kigonin?
(Asi kenam: ole ki u konunet, oret ne kigiboisien – ngot ko chepkerichinik, bik che boisie en kokwotinwek anan oretab tuguk che kibarastaen).

4. Kigotoretiten ano anyun ng'alechuton en ribetab bortang'ung'? Tos mi tuguk che kiiwal kosubgei ak kit ne kinetgei?

(Asi kenam: ole keertoi chito kamanutietab konetisiet, waletab atebet ak ole kiwalda riibetab ge)

5. Tos en keereng'ung' ko ng'alek che kigigonin ko kiiguiyookse komie ak koyanjindos ak biiteng'wong? Tos mi kiy ne igase kita nyolu kearor en oret age ne ter anan kota kechut orit mising-i?

(Asi kenam: kaguiyet, arorunet ne mong'u komie, nametab ge ak biitet koboto magutik che magiityi).

6. Tos kiinyoru ng'alek alak che kirusgei ak chugan kobun oret age? Ngot ko u oton ko ki iipte ano ng'alechoton:

konetisiet ne lumdaat ak kayanet ne yamei).

7. Tos ta komi kiy age ne igase ta kimwa konamgei ak ye kiibunu en konetisietab rwaetab korotik-i?

Tuguk Che Tiinye ak Kowale Konetisietab Rwaetab Korotik

1. En keereng'ung ko nee ne igochin kogaigait konetisietab chametab ge ne konu kiboitunikab tililindo ne tiinyegei ak rwaetab korotik?
2. En keereng'ung, ko tos kiy nee ne kirindoi konetisietab chametab ge ne konu kiboitunikab tililindo ne tiinyegei ak rwaetab korotik?
3. Nee kit ne yae konyumnyumit en inye itaach ak iguiye konetisietab chametab ge ne inyoru?
4. Nee kit ne yae kouuit en inye itaach ak iguiye konetisietab chametab ge ne inyoru?
5. Nee ng'olyot ne imwachini konetiguk ak kebebarta ne tononjin tililindo , ne igochin kogaigait ole kinetitoi chi ne tinye rwaetab korotik?

Kit Ne Kiboisien En Teebsetab Kwanet Bik che Iityindos che Ng'alaljindos

Koitetab Bichoton _____

Taunet

Itagat en kurupini ak kongoi amun koiyan ichutu. Wendi koteebesenen chito ne teebe teebutik. Itiagat iwolu teebutik kobate mat imirmir anan itil kut bik alak yon ng'alale. Kitae ak kesire tuguk che tese tai si tun kotoret bik yon kisiache komie. Ma kituitos kainaikwok ak tuguk che kamwa chi, kobate kiribe ko ung'at.

1. Tos konu kiboitinikab tililindo konetisiet en kasarta ne tai ko kaginyorchin miondab rwaetab korotik ak en kasarta ne keweekte ge kerichek-i? Tos yae icheget noton abogora?
2. Tos ng'al nee che cham ko konin kiboitinikab tililindo agobo rwaetab korotik ak ole nyolu keripto?
3. Tos iguiyookse ng'alechoton konu kiboitinik ak tos iyaanjindos ng'alechoton ak biiteng'wong'-i?
4. Igase ko itiagat iteeben kanyoiguk teebutik che tiinyegei ak kit ne u bortang'ung'-i? Yon keyai kou noton inyoru wolutik che iguiyookse che toretin-i?
5. Tos abogora ko aroru toretiguk agobo ng'alek che tiinye ge ak borto en chamenyuan icheget anan yaache kot iteeben ichek? Tos imwaitai ano miistanyuan konam ge ak konetisietab chametab ge ak tos kigotoretin niton kogaigait ribeng'ung' ne bo rwaetab korotik-i?

Kit Ne Kiboisien En Teebsetab Bik che bo Kamanut che Konu Konetisiet

Itagat en teebsoni. Kichame kegas tuguk che kiibunu konamge ak konetisietab rwaetab korotik en bik che okergei, che obune tugul kaimutioni. Ma kituitos wolutieng'ung' ak kaineng'ung' kobate tebye ko ung'at.

1. Tos u nee konetisiet ne kiiyai en kwenutab bik kwaneng'ung' en ng'alekab rwaetab korotik?
2. Nee kit ne iywokyinini ineet bik alak che omiondosi kibagenge agobo rwaetab korotik?

3. Tos igeere kogonin tetutik che tononjin tililindo ng'alek che yamei che toretin, inye ak bichun okergei, asi orib komie atebetab borwekwok?
4. Ngwany tos mi tuguk che toretok ogoite komie konetisietab chametab ge ne ogochini bichun okergei?
5. Ngwany tos mi tuguk che kirindoi konetisietab chametab ge ne ogochini bichun okergei?

Appendix III: AGC TENWEK Hospital Clearance Letter



AGC TENWEK HOSPITAL

A Ministry of Africa Gospel Church

Postal Address:
P.O Box 39-20400
Bomet-Kenya

Telephone: (254) 728-091900, 20-2045542
E-mail: info@tenwekhosp.org
Website: www.tenwekhospital.org

24th July 2025

Dear Dr. Carol Rwamba Murani and Dr. Dino Crognale,

Re: 2025-0014; "Patient Education Experiences of Adult Hypertensive Patients and Perceived Associated Factors in the Primary Care Setting in Bomet County, Kenya."

This is to inform you that the Tenwek Hospital ISERC Committee reviewed the application documents submitted and approved your study. The approval period is from **24th July 2025 – 23rd July 2026**. This approval is subject to compliance with the following requirements.

- i. Only approved documents including informed consent, proposal, and study instruments to be used.
- ii. All changes including amendments, deviations, and violations are submitted for review and approval by the Tenwek Hospital ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to the Tenwek Hospital ISERC within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to the Tenwek Hospital ISERC within 72 hours.
- v. Clearance for export of biological specimens must be obtained from relevant institutions if applicable.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Fill out an annual renewal form from the website and attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to the Tenwek Hospital ISERC.

Prior to commencing your study, you will be expected to obtain a research license from the National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke> and any other relevant clearances needed.

This ethical approval requires that the study includes an investigator affiliated with Tenwek Hospital, with their affiliation listed as Tenwek Hospital on any subsequent presentations or publications related to the project.






If any of these conditions are not met, the investigator does not have ethical approval from this Committee.

Sincerely,

Dr. Miriam Wanjala,
ISERC Chairperson on behalf of the ISERC Committee



Appendix IV: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 514994	Date of Issue: 25/August/2025
RESEARCH LICENSE	
	
<p>This is to Certify that Dr.. Carol Rwamba Murani of Kabarak University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Bomet on the topic: PATIENT EDUCATION EXPERIENCES OF ADULT HYPERTENSIVE PATIENTS AND PERCEIVED ASSOCIATED FACTORS IN THE PRIMARY CARE SETTING IN BOMET COUNTY, KENYA. for the period ending : 25/August/2026.</p>	
License No: NACOSTI/P/25/4177937	
514994	
Applicant Identification Number	Ag. Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code
	
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See overleaf for conditions	

Appendix V: Evidence of Conference Participation

Certificate No: Academic_062537



ACKNOWLEDGEMENT
— OF PRESENTATION —



**International Conference on Diabetes and Cardiovascular Diseases
(ICODACD-25)**

11th - 12th October 2025 | Nairobi, Kenya in Virtual mode

This certificate hereby attests that.....**Carol Rwamba Murani**.....affiliated with
.....Kabarak University.....delivered a presentation titled
.....Patient Education Experiences Of Adult Hypertensive Patients And Perceived Associated Factors In The Primary Care
.....Setting In Bomet County, Kenya.....

during the conference organized by the EurAsia Foundation of Science, Technology and Management
(EFSTM). The notable presentation took place on 11th - 12th October 2025 at Nairobi, Kenya in Virtual mode .



W. Murani
Organizing Committee Member
EFSTM



Appendix VI: List of Publication

[KJMPS] Editor Decision

External
Inbox



10:59 AM

editorial@kabarak.ac.ke

to me, Dr., Dr.

Rwamba Murani;

We have reached a decision regarding your submission to Kabarak Journal of Medical, Pharmaceutical and Allied Sciences, "EXPLORING THE FACTORS INFLUENCING PATIENT EDUCATION AMONG ADULTS WITH HYPERTENSION IN BOMET COUNTY'S PRIMARY CARE SETTING IN KENYA."

Our decision is to: Accept Submission

Editor-in-Chief, KJRI

[Kabarak Journal of Medical, Pharmaceutical and Allied Sciences](#)
