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Assessment on the Ethiopian Government's Response against the Impact of Chronic Kidney Disease: The Case of Two Kidney Disease Treatment Centers in Addis Ababa, Ethiopia.

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This is to certify that the thesis prepared by Mulubrhan Mesfin, entitled Assessment on the Ethiopian Government's Response against the Impact of Chronic Kidney Disease: The Case of Two Kidney Disease Treatment Centers in Addis Ababa, Ethiopia., and submitted in partial fulfillment of the requirements for the Degree of Master of Social Work complies with the regulation of the University and meets the accepted standards with respect to originality and quality.

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Declaration

I, the witnesses, declare that this paperwork is my own original work and has not been presented for a degree in any university and that sources of materials used for the study have been properly acknowledged.

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Abstract

Chronic Kidney Disease has poses a prominent public health challenge worldwide, with growing occurrence and related illness and death. In Ethiopia, the problem of CKD is intensified by inadequate healthcare facilities, resource restraints, and a great occurrence of danger causes such as hypertension, diabetes, and infectious diseases. This study aims to review the Ethiopian government's response to the influence of CKD, focusing on policy frameworks, healthcare delivery systems, prevention approaches, and treatment availability. This study has applied a qualitative research approach, collecting data from key informant interviews, document analysis, and observation. This implies that the analysis of policies and programs was focused on understanding the insights, practices, and limitations related to the government's CKD response, rather than quantifying specific outcomes. The study focuses on two hospitals in Addis Ababa: Zewditu Memorial and St. Paul's Millennium Medical College Hospital, the research assesses the success of recent interferences and identifies gaps in controlling CKD. The findings highlight the need for improved healthcare strategies, enhanced public awareness, and improved capability for early finding and management of CKD. The study concludes with recommendations for a more integrated and sustainable approach to modifying the influence of CKD in Ethiopia, stressing the significance of multi-sectorial cooperation and resource utilization to meet this increasing health problems.

Key words: *Government, Response, Chronic, Kidney, Disease and Treatment Centers*

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Acronyms and Abbreviations

AKI Acute Renal Injury

C-G Cock croft Gault Equation

CI Confidence Interval

CKD Chronic Kidney Diseases

CRF Chronic Renal Failure

CVD Cardiovascular Disease

eGFR Estimated Glomerular Filtration Rate

EPHA Ethiopian Public Health Association

ESRD End-stage Renal Disease

FDRE Federal Democratic Republic of Ethiopia

FMOH Federal Minister of Health

GBD Global Burden of Disease

GFR Glomerular Filtration Rate

KDOQI Kidney Disease Outcomes Quality Initiative

KDIGO Kidney Disease Improving Global Outcomes

KII Key Informant Interview

MDRD Modification of Diet in Renal Disease

MoH Minister of Health

NCDs Non-Communicable Diseases

RRT Renal Replacement Therapy

SPHMMC St. Paul's Hospital Millennium Medical College

SSA Sub Saharan Africa

USA United States of America

WHO World Health Organization

ZMH Zewditu Memorial Hospital

CHAPTER ONE

INTRODUCTION

1. Background of the Study

Chronic kidney disease (CKD) is a long-term condition characterized by structural or functional abnormalities of the kidneys that persist for over three months, often marked by a reduced glomerular filtration rate (GFR < 60 mL/min/1.73 m²) or elevated albuminuria (Frontiers in Medicine, 2025; Kidney Foundation, 2024). In CKD, gradual fibrosis takes place in the kidney tissue, resulting in scarring and loss of normal kidney architecture, which ultimately impairs the organ's ability to clear waste products from the blood (Jin et al., 2024). Clinical assessments may detect kidney damage long before significant loss of function; these early abnormalities may be nonspecific and subtle but often precede a measurable decline in kidney performance (Nursing2025, 2025).

CKD can arise from many causes. Chronic infections, such as recurrent glomerulonephritis, may leave lasting structural damage in renal tissue, while poorly controlled hypertension and diabetes also contribute significantly to its onset (Jha et al., 2024). Long-term use of certain medications can further harm kidney function. As the disease progresses toward its final, or end stage, patients often require dialysis or kidney transplantation to sustain life (Frontiers in Medicine, 2025). According to recent studies in Ethiopia, chronic kidney disease (CKD) prevalence among patients with chronic illnesses ranges from about 16.7% to 31.5%, highlighting a significant health challenge (Adem et al., 2024; Tesfahun et al., 2025). CKD imposes a substantial social and economic burden on patients and their families due to loss of work capacity, inability to attend school, reduced quality of life, and high out-of-pocket healthcare costs, which often lead

to impoverishment (Memirie et al., 2025; Poon et al., 2021). The disease affects people of all ages and socioeconomic backgrounds, but in Ethiopia, access to treatment is especially limited for poorer populations, increasing their risk of CKD-related morbidity and mortality (Memirie et al., 2025; Poon et al., 2021). Risk factors for CKD in Ethiopia include older age, hypertension, diabetes, overweight, urban residence, and family history of kidney disease, with hypertension and diabetes being particularly significant contributors (Adem et al., 2024; Tesfahun et al., 2025; Poon et al., 2021). Kidney disease in Ethiopian patients is often a "silent illness," with most individuals unaware of their condition during early stages, as symptoms like fatigue, swelling, and changes in urination typically appear late (Doctrepat, 2024; Tesfahun et al., 2025).

Through time, the global disease profile shows some change and chronic diseases have become the world's leading cause of morbidity and mortality, which controlled 60 percent of all deaths in recent times (Yirsaw, 2012). Among the prevalent chronic diseases, Chronic Kidney Disease is the one slowly more recognized as a global public health issue. Chronic kidney disease (CKD) also referred to as chronic renal failure (CRF) or end-stage renal disease (ESRD) was first observed in the 1990s. The most concerning aspect of CKD in sub-Saharan Africa is that it disproportionately affects young, economically productive adults, with very high mortality due to limited access to early screening and renal replacement therapy (Habtu et al., 2024).

In most cases patients with high blood pressure and/or diabetes are at risk for kidney problems (“Emerging Public Health Problems”, 2012). According to the 2015 GBD report, globally 1.2 million people died of kidney failure in 2015, a rise of 32 percent since 2005 (Wang et al., 2016). Additionally, it is believed that around 1.7 million people die from Acute Kidney Injury (AKI) each year (Mehta et al., 2015). CKD was ranked 17th leading cause of death in 1990, and ranked

12th leading cause of death in 2017 according to GBD 2017 report. The global all age CKD mortality rate increased by 41·5% from 1990 to 2017 (Zeena, 2020). If current patterns of CKD continue, it will rise to 5th position by the year 2040 (Foreman, 2018).

There is a significant difference in the burden of kidney disease across countries, due to differences in dictation and care. Although the exact burden of CKD has yet to be thoroughly elucidated in developing countries such as sub-Saharan Africa, it is estimated that incidence rates could be up to four times higher than those found in developed countries (Mogueo et al., 2017). By 2030, it is estimated that more than 70 percent of patients with end-stage renal disease live in low-income countries such as those in sub-Saharan Africa (Ethiopian Public Health Association, 2012). The most alarming aspect of CKD in sub-Saharan Africa is that it disproportionately affects young, economically productive adults, and mortality rates remain very high due to delayed diagnosis and lack of access to renal replacement therapy. (Habtu et al., 2024; Fiseha & colleagues, 2023).

The prevalence of chronic kidney disease is ranged from 2% to 14% in sub-Saharan Africa (Abdelhafeez et al, 2018).Chronic kidney disease is a growing problem in developing countries, such as Ethiopia. The incidence of chronic renal failure (CRF) in Ethiopia is growing like many other chronic diseases due to increased risk factors such as high blood pressure and diabetes mellitus (Fiseha et al., 2014). While CKD is becoming a severe problem in Ethiopia, data on its prevalence and determinant factors are very limited (Bekele et al., 2015). But there are some studies and observations based on health facilities that indicate the causes of CKD, and some studies, both in hospital and in the community, consider the main risk factors for CKD, especially hypertension and diabetes (WHO, 2003).

Recently many Ethiopians die from kidney disease, leading to increased demand for dialysis and transplantation in Addis Ababa. People use various media and social media to seek help, despite the government's limited efforts to provide healthcare to reduce the epidemic. Therefore, this research aimed to assess the Ethiopian government's response against the impact of chronic kidney disease in two kidney disease treatment centers in Addis Ababa, Ethiopia.

2. Statement of the problem

Chronic kidney disease is now a major public health issue worldwide. Because of its increased prevalence among the world population and its effect on morbidity and mortality in patients affected. In recent years, it has taken on the status of public health concern. Of the approximately 1 million people worldwide diagnosed with some form for renal replacement therapy (RRT) with serious chronic kidney disease, 90 percent received treatment in developed countries. Nevertheless, in most developing countries, only 5 to 10 percent of patients needing renal replacement therapy provided the service (Fiseha et al., 2014).

Kidney disease affects the quality of life of patients needing dialysis: for both themselves and their families. It is associated with changes in their everyday habits and lifestyle. At the same time, they are greatly affected by their physical health, their working status, their personal relationships and their social and economic status (Gerogianni et al., 2014). Globally, a substantial body of research has explored the psychological, social, and economic impact of chronic kidney disease (CKD). For example, a meta-analysis found a high pooled prevalence of clinical depression among CKD patients, highlighting serious psychosocial burden. (Nguyen et al., 2023) Psychosocial interventions, such as psychotherapy, have been shown to significantly reduce depressive symptoms in CKD patients. (Smith & Lee, 2024) Additionally, economic

modeling studies project that CKD will impose rising healthcare costs on both patients and health systems, especially as the disease advances and more patients require kidney replacement therapy. (Chadban et al., 2024)

But in Ethiopia, few works on chronic kidney disease has been performed and most of it focuses on the magnitude, prevalence and risk factor of chronic kidney disease. For instance; Kefale Belayneh (2018) also carried out a study in Tikur Anbessa Specialized Hospital (TASH) on the assessment of management and quality of life in patients with CKD. A cross sectional study was carried out between May and September 2017. Using systematic random sampling technique, around 256 patients were recruited. The study result indicated that adherence to management practices and medications were suboptimal. Additionally, quality of life in all stages of CKD declined, which requires actively addressing this problem and the need for health care professionals engaged in renal treatment.

Moges Meron(2016) had undertaken a study on the prevalence and associated CKD factors among diabetic patients attending the Addis Ababa Public Hospitals. A longitudinal cross-sectional study focused on a hospital was performed in three public hospitals; the hospitals were Tikur Anbessa Specialized Hospital, Zewditu Memorial Hospital and St. Paul Hospital. 355 diabetic patients were systematically chosen. The study result indicated that the total prevalence of CKD among diabetic patients by Cockcroft Gault and MDRD calculations was 68 (19.1 %) and 37 (10.4 %), respectively. stage (3-5) prevalence of CKD by Cockcroft Gault equation was 79.4 %, 16.2 % and 4.4 % while it is 73%, 21.6 % and 5.4 % by MDRD equation respectively.

Goro et al. (2019) conducted a research on the assessment of patient awareness, prevalence, and risk factors of chronic kidney disease among hypertensive and diabetes mellitus patients.

Hospital-based cross-sectional study design was performed among adult (≥18 years) hypertensive and diabetes mellitus patients at the Jimma University Medical Center. The study finding indicated that only 59 participants (28.4 %) were aware of CKD and its risk factors. CKD's prevalence was 26 %. Factors associated with chronic kidney disease included high blood pressure, fasting blood sugar up to 150mg / dl, non-users of angiotensin converting enzyme inhibitors (ACEIs), poor knowledge of CKD, and long hypertension length.

The studies above indicate that the prevalence rate in Ethiopia is high, but the response to this serious disease seems to be low, especially the response of government. In addition, although the disease is escalating and killing a lot of people, I couldn't find any studies done on the government's response to the impact of chronic kidney disease in Ethiopia right now as far as I could explore the literature. Because of this, I became inspired to research in this area and try to generate idea to reduce and mitigate the problem. Therefore, this study aims to assess the response of the Ethiopian government's by focusing on the developed policies and programs, the activities conducted and the challenges the government faced in addressing chronic kidney disease. Besides, the involvement of other stakeholders that support the government in mitigating the problem was explored.

3. General objective

The overall objective of this research is to assess the Ethiopian government's response against the impact of chronic kidney disease and particularly the responses at two kidney disease treatment centers in Addis Ababa.

3.1. Specific objectives

- To examine the government's policies and programs responses to prevent and control chronic kidney disease.

- ❖ To explore activities carried out by the government at the two kidney disease treatment centers to mitigate the effects of chronic kidney disease.
- ❖ To investigate the challenges the government faced in addressing chronic kidney disease.
- ❖ To examine the involvement of other actors in the government's action to address the effect of chronic kidney disease
- ❖ To identify mechanisms to improve the government's response against chronic kidney disease.

4. General research question:

What is the Ethiopian government's response against the impact of chronic kidney disease in general and with regards to: the case of two kidney disease treatment centers in Addis Ababa?

4.1. **Specific research questions:**

1) What are the government's policies and programs responses to prevent and control chronic kidney disease in Ethiopia?
2) What are the activities carried out by the government at the two kidney disease treatment centers to mitigate the effects of chronic kidney disease?
3) What are the challenges faced by the government in addressing chronic kidney disease?
4) To what extent other actors involve in the government's action to address the effects of chronic kidney disease?
5) What are the options for the further betterment of the government's response to chronic kidney disease?

5. Scope of the study

This work was delimited its focus in four ways. One, in terms of the topic, the study has concentrated on the assessing Ethiopian government's response to the impact of chronic kidney disease in general and the policies and programs created, the activities undertaken and the challenges faced in addressing the problem in particular. Two, in terms of methodology, the study employed cross sectional qualitative research method. Even if qualitative research by its nature requires an in-depth study of the issue due to time and resources limitations, this study has assessed selected issues concerning the problem. Three, in terms of study subject, the study includes some top government health management officials from ministry of health and both treatment centers. Four, in terms of geographical area (treatment center), both St. Paul's Hospital Millennium Medical College (SPHMMC) and Zewditu Memorial hospital (ZMH) were included to collect the necessary data regarding the issue.

6. Limitations of the study

This study has several limitations that should be considered when interpreting the findings. First, the research was conducted only in two kidney disease treatment centers in Addis Ababa, which may limit the generalizability of the results to other regions of Ethiopia where health system capacity, availability of diagnostic services, and policy implementation may differ. Second, the study relied heavily on qualitative data obtained from interviews and document reviews; therefore, the findings are subject to respondent bias, selective recall, and variations in participants' perspectives. Third, due to limited access to government documents and incomplete institutional records, some policy implementation details could not be fully verified. Fourth, the cross-sectional nature of data collection restricted the study's ability to capture changes in government response over time. Additionally, the sensitivity of discussing government policies

may have influenced the openness of some respondents, potentially affecting the depth of information collected. Finally, resource constraints limited the inclusion of more study sites and a larger number of participants, which might have provided a more comprehensive understanding of the national response to chronic kidney disease.

7. Significance of the study

Chronic kidney disease is currently becoming a burden on development of a nation and its citizens. Significant numbers of people in Ethiopia are died incidentally each year and unknown numbers of people without variation in age and sex become vulnerable to chronic kidney disease at any time. Because of that many people questioned the government's responses to this fatal disease. This study result will have the following advantages: One, it will create awareness to the general public about the Ethiopian government's response towards chronic kidney disease. Two, it will help to evaluate the policies and programs that have been created, the initiatives that have been carried out and the challenges that the government have been facing in addressing the issue. Three, it will help to look for alternatives for better policy and strategic response to the issue. Four, it will help patients with kidney problems, particularly those approaching to end stage of chronic kidney disease and needing the country's quality dialysis and kidney transplant service. Five, it will serve as a preliminary study thus allowing further research of social work to be carried out in the area. Finally, it will offer an opportunity for health agencies, educational centers, policy makers, researchers, activists and fund providers to see the extent of the issue and to develop better strategies for intervention.

8. Organization of the thesis

This thesis is organized in five chapters. The first chapter introduces the Background, problem statement, research questions, objectives, significance of the study, scope of the investigation, limitations of the study, conceptual definition, and study organization. The second chapter presents review of related literature. The third chapter discusses the research methods employed, study paradigm, study design, description of the study area, selection of the study participants and inclusion criteria. Sampling technique, sample size, methods of data collection, data analysis, data quality assurance and ethical consideration are also discussed in details. The analyses or major findings were given and discussed in detail in chapter four. In Chapter five, conclusions and relevant suggestions were drawn.

CHAPTER TWO

LITERATURE REVIEW

This paper focused on possible theoretical framework and conceptual definitions related to the assessment of government of Ethiopian response to CKD. This part will explore relevant theoretical frameworks, including the Health Belief Model, the Capability Approach, and the concept of governance, to analyze the government's strategies in addressing the impact of CKD. Also this chapter comprises the definition of chronic kidney, governance, purpose and structure of kidney, chronic kidney disease, symptoms and classification of chronic kidney disease, cause of chronic kidney disease, chronic kidney disease treatments, burden of chronic kidney disease, function of government in health development, experience of other countries in kidney prevention program and NCD preventive policy and strategy in Ethiopia are discussed.

2.1 Theoretical Perspectives:

The assessment of the Ethiopian government's response to the impact of Chronic Kidney Disease (CKD) can be analyzed through multiple theoretical lenses, each providing unique insights into the challenges and opportunities in addressing the public health issue. Below is a literature review structured around the specified frameworks?

2.1.1 The health belief model (HBM)

This Model is an emotional models those efforts to clarify and predict health linked behaviors, mainly in regard to the acceptance of health services (Becker and Maiman, 1975). The model also advocates that an individual's possibility of accepting a health encouraging behavior is impacted by their perceived vulnerability to a health threat, the perceived harshness of the threat, the perceived benefits of taking action, the supposed obstacles to taking action, cues to action,

and self-efficacy (Janz& Becker, 1984). In the context of CKD, the HBM can be used to analyze factors that affecting individuals' decisions to experience selecting the kidney disease, follow to handling treatments, or adopt lifestyle adjustments to regulate their circumstance. In other word this model is a mental framework that describes health connected activities by centering on individual sensitivities of vulnerability, harshness, welfares, and obstacles to action. In the context of CKD in Ethiopia, this model can be applied to appreciate why individuals may or may not involve in protective behaviors or pursue first treatment action.

2.1.2 Applying the health belief model to CKD

Applying the HBM to the Ethiopian context, one can analyze how insights of susceptibility to CKD (influenced by factors such as family history and awareness campaigns), the perceived severity of CKD (understanding its potential complications), and the received benefits of early detection and treatment (improved quality of life and reduced healthcare costs) impact individual's willingness to engage in preventative behaviors. The perceived obstacles (such as distance to healthcare facilities, financial constraints, and cultural beliefs) can also be assessed to identify strategies for improving access to and utilization of CKD- related facilities, applying the HBM to Ethiopia's CKD response involves allaying how the government's policies and programs align with the model's constructs. For example, the Ethiopian Ministry of Health has implemented initiatives to increase awareness about non communicable diseases (NCDs), including CKD, through community health programs. However, the effectiveness of these initiatives is limited by inadequate funding, poor infrastructure, and low health literacy (Abebe et al., 2020). By leveraging the HBM, policy makers can design targeted interventions the address perceived barriers (e.g., cost of treatment) and emphasize the benefits of early detection and

management. This approach could improve community engagement and improve health outcomes.

2.1.3 The capability approach:

This approach, established by Martha Nussbaum (2000), emphases on individuals' abilities their actual freedoms and prospects to achieve appreciated functioning in life. In Ethiopia, disparities in healthcare access between urban and rural areas, coupled with poverty, limit the capabilities of individuals to prevent or mange CKD (Sen, 1999). The government's response must focus on building healthcare infrastructure, training healthcare workers, and providing affordable treatment options to empower individuals and communities to address CKD effectively.

2.1.4 Governance and public administration

Successful governance is major for the effective government reaction to CKD. In this context governance, implies that the processes or systems, institutes, and stakeholders participated in decision making and implementation related activities to CKD strategies and platforms (World Bank, 2007). Major features of effective or good governance comprise transparency, responsibility, involvement, and applying the rule of law (UNDP, 1997). Explaining the Ethiopian government's reaction via a governance theory includes evaluating the degree to which these doctrines are encouraged in the design, application, and monitoring of CKD interrelated initiatives. The main part of government and public administration is fundamental in addressing CKD as a public health problem. Good governance contains policy design, resource provision, and implementation of policies to fighting against CKD. In Ethiopia, the government has integrated CKD and NCDs, into its health sector transformation plan. However, problem such as administrative inadequacies, bribery, and inadequate cooperation between national and local governments hamper the successful implementation of these strategies (FDREMH, 2015).

Supporting administrative system and discharging responsibility are crucial for enhancing the CKD reaction.

2.2 Conceptual Definition:

2.2.1 Government Response:

In the context of this study, 'government response' refers to the set of policies, programs, and interventions implemented by the Ethiopian government to mitigate the impact of CKD.

2.2.2 Structure and function of kidney

Kidneys are vital organs found in the abdominal cavity, weighing between 125-155 grams in males and 115-155 grams in females. They are shaped like a bean and receive 20-25% of the heart's output. Most people have two kidneys, consisting of approximately one million nephrons. Blood flows into each nephron through the glomerulus, a capillary-filtering cluster. These are the urine-producing structures of the kidneys. Each kidney excretes urine through a tube called the ureter that leads to the bladder (Biggers, 2019).Kidneys maintain homeostasis by controlling fluid levels, electrolyte balance, and internal body environment. They remove waste products like urea and uric acid, reabsorbing nutrients and transferring them to support health. They also re absorb glucose, amino acids, bicarbonate, potassium, salt, phosphate, chloride, sodium, and other products. The kidneys also control pH levels and blood pressure, but with slower changes (Jenna et al., 2017).

2.2.3 Chronic kidney disease (CKD)

CKD is a situation that occurs from multiple heterogeneous diseases characterized by a chronic incidence of kidney functional and/or structural abnormality typically for more than three months (Levin et al., 2013, Webster et al., 2017). This is because one of the main functions of the kidney

is to process the waste materials in the fluids and bloods in order to reabsorb the metabolically active materials and eliminate the waste and toxic substances. But during renal failure waste products cannot be completely removed and which will cause further damage to the vital organs of the body (Small et al., 2012). Glomeruli are the site for the first step in the production of urine through the filtration of plasma vapor. GFR less than 60 ml / min/1.73 m^2 with / without a kidney damage marker are diagnosed as CKD, the main indicator of decreased or impaired renal function (Levin et al., 2013). GFR measures clearance of the substance after glomerular filtration which passes through the kidney for excretion. The normal GFR varies by age, sex, race, weight, cooked meat ingestion, malnutrition, and use of some drugs. Most of the time CKD is asymptomatic at an early stage, or some non-specific symptoms can manifest. It became symptomatic in its severe form (end stage), which is difficult to treat and avoid complications (Webster et al., 2017). So, it is very important to test and diagnose CKD thoroughly based on the findings from the laboratory.

2.2.4 Symptoms and classification of chronic kidney disease

Chronic kidney disease is slow to develop, with few symptoms. Until the disease progresses, it is often not known. If detected early, treatment may slow down or avoid declining kidney function and decrease the adverse effects on other body functions (Razmaria, 2016). Patients may get few signs or symptoms in the early stages of chronic kidney disease. Chronic kidney disease may not become evident until it seriously impairs the kidney function. When kidney damage develops gradually, symptoms and signs of chronic kidney disease develop over time. Some of the kidney disease signs and symptoms may include: nausea, loss of appetite, exhaustion and weakness, and issues with sleep (Kidney Health Australia, 2016). A test using a sample of urine assesses the

presence of protein (albumin) in the urine; repeated findings of 30 mg or more may indicate a problem (Razmaria, 2016).

In 2002, the Medical practice strategies of the National Kidney Foundation's Kidney Disease Consequences Quality Initiative (KDOQI) presented for the first time a working definition of CKD, regardless of the cause of kidney disease, based on the occurrence of either kidney damage or a glomerular filtration rate of less than 60 ml / min/1,73 m^2 for more than 3 months. The guidelines also suggested a grading system based on severity determined by the degree of kidney function, measured from the Estimated Glomerular Filtration Rate (eGFR), again regardless of the kidney disease etiology. Using then available databases, the guidelines documented the increased number of eGFR-related complications, morbidity and mortality, and provided estimates of CKD prevalence based on the new classification. The description and classification of KDOQI was widely accepted and immediately influential, and was widely applied to worldwide epidemiological studies.

Table 1.1 Kidney function can be classified into stages depending on eGFR.

Stages	Glomerular level
1st	A standard GFR ≥ 90 mL/min/1.73m2
2nd	Slightly diminishedeGFR between 60–89 mL/min/1.73m2
3(a)	Mild–moderate lessening in eGFR between 45–59 mL/min/1.73m2
3(b)	Moderate–severe decline in eGFR between 30–44 mL/min/1.73m2
4th	Severe shrinkage in eGFR between 15–29 mL/min/1.73m2

5th	Kidney failure as eGFRdeclines< 15 mL/min/1.73m2 or dialysis is started

Source: *Kidney Health Australia (2015)*

Description of CKD stages

Early stages (stages 1–2)

Many people have no indications of CKD; however, there is additional risk of dehydration and a higher sensitivity to medicines. Before beginning any new drugs, including over the counter and ' natural ' or herbal products, it is very important to talk to doctors. Management contains balancing a healthy blood pressure and making healthy lifestyle choices to delay or prevent progress to the next stage.

Middle stages (stages 3–4)

During this point, finding kidney disease is more likely since the amount of waste (urea and creatinine) in the blood increases. Patients may start feeling unwell, and note changes in the number of times when urine passes. Blood pressure is rising as kidney function slows down. It may show early signs of bone disease and anaemia. Management includes regulating the blood sugar, managing blood pressure, not smoking or using cigarettes, eating a healthy diet. All these will delay kidney disease development and reduce the likelihood of additional complications.

Later stages / end stage kidney disease (stage 5)

Changes in the amount of urine passed may happen. There is almost always high blood pressure. The amount of protein in the urine is increasing, just as the blood levels of creatinine and potassium are increasing. Patients are more likely to feel unwell, and may experience other kidney disease symptoms, such as low haemoglobin (anaemia), as well. Even with the best

treatment, kidney disease often leads to stage 5 (or end-stage kidney disease) that needs dialysis or a kidney transplant to keep life going.

2.2.5 Cause of chronic kidney disease

Mostly, kidney disappointment is triggered by other health difficulties which have done gradually, everlastingharm (damage) to the kidneys. They may not function as well as they should if the kidneys are harmed. If the kidney damage tends to get worse, the kidneys become less and less capable of doing their job properly, leading to CKD. Kidney failure is the last (greatest damage) stage of CKD (American Kidney Fund, 2020). The two key reasons of CKD are diabetes and high blood pressure, which are accountable for up to two-thirds of the grounds. Diabetes occurs when blood sugar is too high, causing damage to the body's many organs, including the heart and kidneys, as well as blood vessels, nerves and eyes. High blood pressure, or hypertension, occurs as blood pressure increases against the blood vessel walls. High blood pressure can be a leading cause of heart attacks, strokes and chronic kidney disease if uncontrolled or poorly controlled (National Kidney Foundation, 2019). Other conditions affecting the kidneys are: glomerulonephritis, a group of diseases which cause inflammation and damage to filtering units of the kidney. Inherited diseases also, such as polycystic kidney disease, which causes large kidney cysts to form and destroy the surrounding tissue. It can cause infections besides frequent urinary infections and can damage the kidneys (National Kidney Foundation, 2019).

2.2.6 Chronic kidney disease treatment

When the kidneys do not function correctly, it has an important effect on other organs in the body. This means patients have to take some form of care in order to stay healthy. It also means

the patient could be at risk for kidney failure complications. Some of the most common kidney failure complications include anaemia, bone disease, heart disease, high potassium, and retention of fluid. To mitigate this complication, treatment options may include low-protein diet, antihypertensive and statin medications, diuretics, vitamin supplements, stimulants to the bone marrow, and calcium-reducing drugs (American Kidney Foundation, 2020). If the disease progresses and approaches the end-stage renal disease (ESRD), then the treatments used above are no longer sufficient. The kidneys of end-stage kidney disease patients can't just keep up with the waste and fluid elimination process. Although there is no cure for CKD, there are medications which can significantly slow disease progression. Treatment can vary depending on the stage of the illness and the underlying cause, such as diabetes or high blood pressure. There are essentially three treatment options for a person with chronic kidney disease (ESRD), including dialysis, kidney transplantation, and conservative treatment (Kidney Health New Zealand, 2020).

Dialysis

People cannot live without proper washing of the blood. So, a procedure named dialysis will take over the job of filtering and cleaning the blood when the kidneys have failed completely. Although dialysis isn't as simple or as good as having healthy kidneys, time and effort are also required. Yet dialysis still does a pretty good job to help people live a normal (treatment) life. Treatment with dialysis does not completely replace all kidney functions, meaning that patients are almost always required to take certain medications regularly. These include anti-hypertensive medications, phosphate-lowering drugs in the blood, vitamins and drugs that increase red blood cell development to avoid anemia (NIDDKD, 2018). The need for dialysis comes on slowly for

most people. Many people begin dialysis when their kidney function (filtration rate) ranges from 5 to 10.

People may have kidney failure when kidney function is poor and beginning dialysis may help to relieve them. Starting dialysis can also help people to regain their appetite and maintain their strength, which is harder to rebuild than it is to retain (NIDDKD, 2018). Kidney dialysis aims to complete some functions of a healthy kidney. These include: removal of waste, excess salt, and water. Besides, the purpose of dialysis is to maintain the correct level of chemicals in the blood including sodium, bicarbonate and potassium. There are two common forms of dialysis called haemodialysis and peritoneal dialysis. Both hemodialysis and peritoneal dialysis take over the kidney's main functions like, removing waste materials, extra salt and body fluids (Kidney Health Australia, 2016).

Hemodialysis

Hemodialysis is the mechanism by which blood is washed outside the body. Two needles will be inserted into the vascular access during hemodialysis, one for collecting the blood and the other for returning washed blood to the body. The patient is connected to the dialysis machine (via tubing) through a vein in the neck; the blood is pumped from the body to a special device called the dialyzer, which consists of tiny capillaries. Blood is continually pumped through the dialyzer, where it extracts waste products and excess water. The blood becomes purified when the waste products diffuse from the blood across the membrane of these tiny capillaries. This filtered blood is then returned through greater tubes to the patient's body (Kidney Health New Zealand, 2020). Many people go three days a week onto the screen. They sit in a chair and are attached to the computer at any time for four to five hours. Some people get dialysis more often and for longer

periods. There are three places where the care of dialysis takes place–at home, in a satellite clinic, or in the hospital. Turning on the machine at home enables the continuity of normal life, so it is best if the patient can do it. But if the care cannot be handled, then going to the satellite clinic or hospital three days a week are the other options. Hemodialysis helps maintain a proper chemical balance such as potassium, sodium and chloride and keeps blood pressure under control (Kidney Health New Zealand, 2020).

Peritoneal dialysis

The characteristics are identical to the artificial filter used in hemodialysis. The pores allow some substances to move through while maintaining others. Peritoneal dialysis uses this organ which naturally filters. This is where blood washing is performed inside the body, rather than through a pump. The tummy lining is known as peritoneal membrane. This membrane protects some of the organs in the body, such as the intestines, lungs, and stomach. Special dialysis fluid is inserted into the abdomen through a soft rubber tube from a plastic bag. A few hours the fluid is still in the tummy (Fresenius Medical Care, n.d). While it is in there wastes and excess water pass from the blood vessels in the peritoneal membrane into the dialysis fluid. The fluid is adjusted after a few hours by pouring it out into another plastic bag and replacing it with fresh fluid as before it is called an "exchange." The fluid used is flushed into the toilet. This dialysis occurs every weekday, usually four times a day. During the exchange the patient attached for 20 to 40 minutes to a series of tubes and bags. The catheter is placed in between exchanges, on the outside of the body. This tube can be hidden under the clothing, and the patient can go about the daily life as usual between exchanges (Kidney Health New Zealand, 2020). Since peritoneal dialysis does not require a computer, fluid exchanges can be practically done anywhere. Peritoneal dialysis can be done at home, at work or on trips which requires careful supervision. Peritoneal dialysis gives

more flexibility to the patients. Even if peritoneal dialysis helps patients to get their health, there are some complications including inflammation, low blood pressure and bleeding in the abdomen. So, patients need to work closely with the health care staff including nephrologists, dialysis nurses, dialysis technicians, dietitians and social workers. There is a very important role for the patient and his / her family. Through learning more about the peritoneal dialysis, patients will collaborate with the health care team to achieve the best possible results and lead an active life (Kidney Health Australia, 2016).

Kidney transplant

Sometimes the patient kidneys cannot function again even if they do dialysis and a kidney transplant may be an option for some people with total kidney failure. Kidney transplant is the process where a donor surgically removes a kidney and it is inserted into the recipient. The patient may receive a kidney from a member of his family, a partner or a close friend. They are known as living kidney donors. The donor and recipient of the kidney should have the same blood type, cell-surface proteins, and antibodies to minimize the risk of the new kidney being rejected. A sibling is typically the most compatible match, as their genetic makeup will match closely. Additionally, the patient may also receive a kidney from a person recently deceased, known as a cadaveric (deceased) kidney donor (National Kidney Foundation, 2015).

The operation of a kidney transplant involves opening the lower part of the patient's abdomen surgically to place the new kidney within. The kidney is located in the lower abdomen's right or left leg, just above the front of the hip bone. The new kidney's blood vessels are linked to the current blood vessels, and the ureter (urine tube) is linked to the patient's bladder. The procedure normally takes about three to five hours (National Kidney Foundation, 2013). Getting a transplant from a living donor to the kidney means the patient will get better results. If the

patients have a transplant from a living donor that usually means the patient won't have to wait for the transplant for as long as possible. Transplant is by far the best treatment option, since the "replacement kidney" can almost completely replace the failed kidney functions and allow the patient to lead a normal life (National Kidney Foundation, 2015). A treatment for kidney transplants is very effective for patients who undergo end-stage kidney disease (kidney failure) but is not a cure. A transplant provides a more active life, with no dialysis required. The new kidney of the patient nevertheless needs ongoing care. Besides, patients will need to take medication to stop their body from rejecting the kidney (anti-rejection) as long as they have the kidney transplanted. How long a transplanted kidney can work for a patient will depend on many factors. If a kidney transplant stops working, it will need dialysis care again (Kidney Health Australia, 2016)

There is also the chance of another transplant. Transplants of the kidneys are very effective. An average, one year later 95 percent of transplants work. When the first year of transplantation goes well, the chances are good that it will work very well for several years. Success rates for living donor kidneys are higher than those for deceased donor kidneys (Kidney Health Australia, 2016). A good kidney transplant offers better quality of life compared to dialysis. This is because a transplant offers significantly greater mobility, increased levels of energy, and a less restricted diet. Moreover, studies have shown that people undergoing kidney transplants live longer than those still on dialysis. A successful kidney transplant will reduce many of the kidney failure complications (National Kidney Foundation, 2013).

Conservative management

Conservative kidney failure treatment means the health care team is able to provide the patient with ongoing care without dialysis or kidney transplantation. Patient quality of life and management of symptoms are the focal points of treatment. The decision to begin dialysis is based on the will of the patient. The dialysis will prolong and improve quality of life for most people. For others who have severe conditions besides kidney failure, dialysis can behave as a burden that only prolongs misery. Managing diet is the most common method to conservative management and it restricts protein. Limiting protein will reduce the amount of work to be done by the kidneys, so the patient will last longer. But in any case, patients have the right to decide how to treat their kidney failure (NIDDKD, 2018).

2.3 Burden of chronic kidney disease

Long-lasting renal disappointment has taken the public health worry in current years, due to its improved occurrence among the world's population. According to global burden of disease 2012 report globally, CKD is having high burden in low and middle income countries including Africa (Lozano et al., 2012). In Africa the prevalence rate is high like other countries. A study conducted by Christiana et al., (2014) in Lagos, Nigeria on Chronic Kidney Disease: a ten-year investigation of illness and epidemiological trends. The study was carried out among a total of 792 CKD patients. The study result shows that the median incidence of CKD in Nigeria is between 300 and 400 per million populations.

Likewise, Mubarak et al. (2013) also conducted a study in Tanzania on the prevalence of Chronic Kidney Disease in adult diabetics out of patients. The investigation was conducted in

369 diabetic patients from October 2011 to March 2012. The research result shows that CKD is 24.7 percent occurrence. In Ethiopia there are few researches that done on institutional based on the incidence, prevalence and risk factors of CKD. Such studies predicted that patients with CKD will be high due to lack of early screening, inability to cost affordability for dialysis, and shortage of kidney treatment centers in the country. Forinstance, a study conducted by Abdulkadr et al (2017) on Epidemiology of Chronic Kidney Diseases in Ethiopian Police Hospital: Institutional based cross-sectional study. It is a hospital-based cross-sectional study which was conducted using systematic sampling method among 362 patients with Diabetes Mellitus. In this study, the prevalence of chronic kidney disease diagnosed by Cockroft-Gault equation and Modification of Diet in Renal Disease equation was 14.6% and 7.7% respectively. The study showed a high prevalence of chronic kidney disease among Diabetic patients. Age and previous recurrent kidney disease were show association with Chronic Kidney Disease in the study.

Fisha et al (2014) also undertook a research on CKD and under diagnosis of renal inadequacy among diabetic patients attending a hospital in southern Ethiopia. The study involved a total of 214 diabetics attending the follow-up clinic at Butajira hospital in southern Ethiopia. In this study, the approximate prevalence of CRF, defined by eGFR< 60 ml / min/1.73 m2, was 18.2 percent and 23.8 percent respectively, as defined by the MDRD and C-G equations. Based on the above explained institution related studies which are researchedin different times, the occurrence of CKD in the Addis Ababa population is still not well known.

2.4. Government Roles in preventing and controlling CKD

CKD encompasses important public health problems worldwide, and the activities of government in solving these problems are multidimensional. They are essential in creating rules that encourage early recognition, protection, and management of CKD. By applying wide ranging health strategies, including supporting kidney functions tests and encouraging access to nephrology facilities, governments can successfully decrease the problem of CKD on health systems and increase patient quality of life (Levin et al., 2017).

Moreover, governments can found clinical practice procedures that help to consistent care and improve patient health care. Additionally, the government has essential part in promoting interdisciplinary methods to CKD management by financing training programs for healthcare benefactors, which can improve the ability of the healthcare staff to address or meet the multifaceted needs of CKD patients (Wiggins et al., 2019). Finally, an active and wide-ranging governmental approach is critical for alleviating the impact of CKD, achieving that defensive actions, regulatory frameworks, and equitable access to care are successfully included into national health policies.

2.4.1. Main areas of government role in health system

Ministries of Health are mandated to leading health growth through the application and improvement of key functions of the health system (WHO, 2010).This includes leadership and governance, funding for health care, delivery of health services, development of health workforce, provision of essential medicine and providing health information system. Efforts are coordinated with other related agencies and ministries to achieve health system objectives.

2.4.1.1 Governance and leadership

Governments are the guardians of social commitments and principles as reflected in their constitutions, treaties and conventions, such as equality, social justice and equity. Health governance is increasingly seen as a key subject on the development agenda. The rights to health care are clearly indicated in many constitutions around the world including Ethiopia. It is the duty of governments to provide access to these facilities without financial barriers and to ensure that the importance of health as a basic human right of all is protected (World Health Report, 2000).Health Ministry oversees the overall development of health systems using its governance function, which includes policy analysis and formulation, regulating service delivery among partners, developing quality assurance standards, and ensuring the implementation of agreed policies and strategies (Siddiqi, 2009).In line with national ethical values, the governance function is supported by a routine information system, supplemented by population-based surveys and health legislation (McGlynn et al., 2001).

Governments are expected to measure health systems success with respect to health services in terms of income, quality improvement, and capacity and patient satisfaction (Hurtado et al., 2001). WHO has developed several analytical tools to help health ministry's conduct periodic performance assessment exercises and develop their evidence-based strategies. The need for government intervention in health care is demonstrated by the peculiarity of health services which cannot be left for generation and distribution only to market forces. Governments usually intervene to offset the market's reluctance to ensure that the most vulnerable groups are included (Nayar, 2007). Given the increasing complexity of health care systems and changing epidemiological and demographic scenarios, the role of governance is becoming of paramount importance.

2.4.1.2 Providing health care services

Although funding for health care is socialized in most developed countries, provision of health care services is supported by both public and private providers as well as non-governmental organizations. The role of government is often to direct the overall development of health by developing health policies and programs, protecting vital public health functions and controlling the provision of health services (Siddiqi, 2009).While the role of private hospitals in service delivery is growing in developed countries, public hospitals remain the reference in various aspects for quality standards, service rates, training of skilled health professionals, and health and medical research. Governments are also involved in delivering clinical services at primary, secondary and tertiary health systems levels. Across neighborhoods, job environments and public institutions, including health centers, research networks and hospitals, these services are offered (Jean, 2007).Government's role in service delivery contributes to increased equity in access to health care, particularly in rural and remote areas where there is limited supply of qualified private health centers. Direct government delivery of health services contributes to market regulation for both pricing and quantity of services (Rosenthal et al., 2001).With increased globalization and its effect on changing lifestyles, including eating habits and the rapid increase in international travel and communication technology, the delivery of critical public health functions is becoming complicated. Government is responsible for health protection and assumes that responsibility by implementing the essential functions of public health, including surveillance systems and the provision of public goods such as mass immunization programmes, environmental protection, food fortification, food safety, so on.

2.4.1.3 Financing health system

Health care funding is one of the fundamental method of health systems. Most health sector improvement methods attempt to address health financing issues such as mobilization of funds, distribution of financial risks, allocation and utilization of services, and provider payment incentives. Financing health care has progressed from personal payment at the time of service delivery to financing through health insurance by the employer and employee at the workplace (WHO,2008). Eventually, every country faces the need for governmental financing of health care either for the total population or at least for vulnerable groups. Government funding is essential for services that insurance plans avoid or are inefficient in reaching, including as community-oriented services and groups at special risk, such as infants and women (Theodore and Elena, 2014).Governments play a major role in the financing of health care by mobilizing the necessary resources through public budgets and other contributory mechanisms, pooling resources allocated to health development, guiding the resource allocation process and purchasing health services from different providers. The MoH is entrusted with safeguarding access to equity by improving financial risk protection, reducing financial barriers to access, in particular, to the poor and vulnerable populations, and ensuring fair funding of health care by all income groups(Health Care Financing Administration, 2003).

2.4.1.4 Developing health workforce

Since human resources are the key inputs and assets in health systems, policymakers are responsible for designing effective human resource development strategies aimed at meeting people's real needs, ensuring appropriate skills mix, and increasing fairness in human resource distribution, managing them appropriately, and tracking and assessing the national health

workforce. The health workforce applies to those individuals who provide or assist with the provision of health services, or who assist with the management of health care facilities. This involves health care professionals employed within the healthcare sector, such as registered nurses (RNs) working in hospitals, as well as those outside the healthcare sector, such as RNs working in schools or for insurance companies (The Center for Health Workforce,2020). Appropriate human resource development policies and strategies rely on the degree of inter-sectoral cooperation between health ministries and education ministries, as well as other relevant departments. The lack of coordination between different stakeholders often leads to the duplication and inefficient production of the health workforce.

2.4.1.5. Provision of essential medicine

Medicines have an essential part in the health care system all over the world. When the appropriate use of medicine is done, they can cure the different ailments and promote the health of the patients and results in the wellbeing of the patients. Essential medicines are crucial to satisfy the priority health-care needs of the population, promote health, and achieve sustainable development (WHO, 2007). They are intended to be available within the context of functioning health systems at all times in adequate amounts, in the appropriate dosage forms, with assured quality, and at a price the individual and the community can afford (WHO, 2005).Ensuring universal access to free or affordable essential medicines is one of the “core obligations” for fulfilling the right to health (UN, 2000). Those, who have encouraged countries to amend their national legislation or constitutions to provide for this specific right, Governments, through health ministries, are responsible for providing the necessary medicines and vaccines and supporting laboratory networks to fulfill their public health functions and to protect national health security.

2.4.1.6. Establishing health information system

Health information is the data relating to the medical history of an individual, including symptoms, conditions, treatments, and tests (American Health Information, 2020). A health record includes information such as: history of a patient, testing results, X-rays, clinical records, demographic information, and notes. Health records of a patient can be analyzed separately to see how the health of the patient has changed; it can also be analyzed as part of a larger collection of data to understand how the health of a population has changed, and how medical treatments can improve health outcomes. Efficient use of information forms the basis of current practice in public health. Reactions to public health such as epidemic investigations, disease prevention approaches such as kidney disease, and changes to quality and effectiveness of the health system, require prompt, reliable health information. Health information sources, such as electronic health reports, exchanges of health information, medical reports, immunization information systems, syndromic monitoring systems, and other public health databases, can provide critically valuable data on emerging population health needs and successful strategies for public health and patient care practitioners. Government also implements legislation that forms the legal environment concerning the use of health information for public health purposes, including resolving legal concerns relating to privacy, confidentiality, protection and consent (WHO, 2008).

2.5 The Role of the Ministry of Health (MoH) in Controlling Chronic Kidney Disease

The MoH is the essential administrative organization accountable for health system stewarding for a nation's. Regarding to a non-transmitted disease like CKD, the MoH's role exceeds mere treatment and includes management, leadership, policy preparation, strategic planning, and regulation to achieve a all-inclusive and reasonable response (WHO, 2021).

The MoH Role in the Ethiopian Context

The MoH of Ethiopia has documented the rising burden of NCDs, comprising CKD. The primary role of MoH is to design and endorse national strategies, plans, and rules specifically for NCDs. A key document is the National Strategic Action Plan for the management and Regulation of NCDs, which incorporates CKD within the wider NCD agenda. This strategic frameworks goal to decreasing risk factors, improving initial finding, and increasing treatment services, by providing a roadmap for all health sector stakeholders (FDRE MoH, 2016).

A serious policy of the Ethiopian MoH is enforcing its strong Health Extension Program at the primary healthcare level. The MoH's role encompasses training Health Extension Workers to address community-level consciousness movements on CKD risk factors and to enable simple screening measures such as blood pressure and blood glucose measurement. This task-shifting approach is essential for primary case judgment in rural areas where access to doctors and laboratory amenities is inadequate (Kibret et al., 2022). And also the MoH is a crucial organ for building the ability of the health system to prevent or control CKD. This comprises preparing health centers and hospitals with important diagnostics like dipstick urinalysis and serum creatinine tests, and ensuring the accessibility of initial-level treatments for hypertension and diabetes. The role of Ethiopian MoH's includes creating and upholding a national NCD archive and encouraging research to produce local data on the occurrence, reasons, and consequences of CKD. This sign is critical for updating strategy changes, resource provision, and assessing the influence of involvements (Hallemariam & Bete, 2019).The decisive achievement for any MoH lies in its capacity to provide planned management, foster multi-sectoral relationship, and ensure that CKD care is reasonable, reachable, and maintainable.

2.6 Non-Communicable disease preventive policy and strategy in Ethiopia

Non-communicable diseases have become a major public health issue in Ethiopia, contributing highly to morbidity and mortality, with cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases accounting for a growing share of the disease burden (WHO, 2022).

Ethiopia has also approved the WHO Framework Convention on Tobacco Control (FCTC) and has enacted legal measures to regulate tobacco and alcohol consumption, as well as promote healthy dietary habits and physical activity (FMoH, 2019). However, despite these efforts, there remain significant gaps in policy implementation due to financial constraints, weak healthcare infrastructure, limited human resources, and inadequate implementation of existing regulations (Berhane et al., 2021). The primary healthcare system in Ethiopia, which has historically focused on communicable diseases, lacks the necessary integration of NCD services, leading to missed opportunities for early finding and prevention (Tolla et al., 2020). Moreover, the burden of NCDs disproportionately affects lower-income populations due to disparities in access to healthcare, insufficient health literacy, and higher exposure to risk factors such as poor nutrition and environmental pollution (Assefa & Abebe, 2022). Addressing these challenges requires a multi-sectoral approach that goes beyond the healthcare system to involve sectors such as education, agriculture, finance, and urban planning, ensuring that policies are designed to create environments conducive to healthier lifestyles (WHO, 2021).

2.7. A Review of Multi-Actor Participation in CKD Prevention in Ethiopia

This literature observes the main roles these different non-state actors (universal associates, NGOs, professional relations, academic organizations, and societies) play in connecting the gaps in the national health system's response to the growing burden of CKD. Universal non state-

actors provide important procedural and monetary resources that shape the national CKD and NCD program. The WHO country office has been influential in assisting the MoHto change its NSAP for NCDs, providing organized international rules and practical assistance for policy construction (WHO, 2017). For example, NGOs and faith-based organizations have performance a key role in service distribution, predominantly in country side areas and for susceptible people. Non-state actors such as the Ethiopian Diabetes Association and the Lions Club have been participated in institutional seasonal screening sites for diabetes and hypertension (causes of CKD) (Molla, 2021). Institutions like AAU and the UoG conduct studies that measure the occurrence and recognize the unique characteristics of CKD in the Ethiopian, such as studies linking CKD to herbal drugs (Yesus & Gobezie, 2021). Besides, these organizations are accountable to educate the coming healthcare staff of country (Hallemariam & Bete, 2019). Therefore, the controlling of CKD in Ethiopia is a cooperative effort that excels the command of the MoH. The participation of universal associates, NGOs, professional links, academic organizations, and societies makes a multifaceted protection alongside the disease.

2.8 Other countries experience in preventing and controlling CKD

Preventing and controlling Chronic Kidney Disease (CKD) has become a global health priority due to its increasing prevalence, substantial healthcare burden, and long-term impact on quality of life. Below is an overview of approaches taken by several countries, highlighting key strategies in the prevention and control of CKD:

2.8.1 United States

In the United States, the approach to preventing and controlling chronic kidney disease (CKD) includes a complex approach that incorporates public health initiatives, research funding, and

healthcare access improvements. The National Kidney Foundation's Kidney Early Evaluation Program (KEEP) is a prominent initiative that offers free screenings to high-risk populations, including individuals with diabetes and hypertension, and aims to educate them about CKD prevention (National Kidney Foundation, 2020). This proactive stance on early detection is critical, as studies have shown that early intervention can significantly improve patient outcomes and reduce the progression of kidney disease (U.S. Department of Health and Human Services, 2022). Public awareness campaigns, including those that target lifestyle changes such as diet and exercise, are also crucial components of the U.S. strategy, highlighting the importance of maintaining overall health to prevent CKD. These efforts demonstrate a concerted commitment to reducing the burden of CKD, improving quality of life for patients, and enhancing healthcare systems to better address kidney health.

2.8.2. India

In India, the rising prevalence of chronic kidney disease poses significant public health challenges, exacerbated by limited awareness, inadequate healthcare infrastructure, and disparities in access to medical services. The Indian government has launched several initiatives aimed at combating non-communicable diseases, including the National Programme for Prevention and Control of Diabetes, Cardiovascular Diseases, and Stroke (NPDCS), which addresses risk factors closely linked to CKD (Indian Council of Medical Research, 2020). However, the implementation of effective screening and preventive measures is hindered by challenges such as a lack of resources and trained healthcare professionals, particularly in rural areas. Recent efforts have aimed to improve access to nephrology services and promote research into CKD, but significant gaps remain. Investment in healthcare infrastructure, including the

establishment of more specialized kidney clinics and training programs for healthcare providers, is crucial to better manage CKD and improve health outcomes for at-risk populations.

2.8.3. Nigeria

Nigeria faces considerable challenges in the prevention and control of chronic kidney disease, largely due to a combination of limited healthcare resources, lack of public awareness, and inadequate screening programs. The Nigerian government has recognized CKD as a significant public health issue and initiated the "Healthy Kidney" campaign to raise awareness about the disease and its risk factors, such as hypertension and diabetes (Nigerian Ministry of Health, 2022). However, many individuals still present with late-stage disease due to insufficient early detection efforts, which are exacerbated by a shortage of nephrologists and specialized care facilities across the country (Suleiman et al., 2021). The healthcare system is often overwhelmed, with limited access to renal replacement therapy, leading to poor outcomes for those diagnosed with CKD. Furthermore, social determinants of health, including poverty and limited health literacy, hinder effective disease management and prevention efforts. To combat these challenges, there is an urgent need for enhanced healthcare policies that focus on improving access to screening and treatment, as well as public health campaigns that educate communities about CKD prevention strategies. Strengthening healthcare infrastructure and promoting community engagement are essential steps toward effectively addressing the growing burden of chronic kidney disease in Nigeria.

The experiences of the United States, India, and Nigeria reveal important approaches and challenges in the prevention and control of Chronic Kidney Disease (CKD), offering relevant insights for the Ethiopian context. In the United States, CKD prevention follows a

comprehensive public health approach that emphasizes early detection through free screening programs such as the Kidney Early Evaluation Program (KEEP), coupled with strong public education campaigns focusing on high-risk groups and lifestyle modification. India, on the other hand, integrates CKD-related risk factors within its broader national non-communicable disease programs, yet continues to struggle with limited awareness, inadequate healthcare infrastructure, and shortages of trained healthcare professionals, especially in rural settings. Nigeria faces similar challenges, as efforts to address CKD are hindered by limited screening services, shortages of nephrologists, and socioeconomic barriers, despite initiatives such as the "Healthy Kidney" awareness campaign. Taken together, the experiences of these countries highlight the global emphasis on early detection, public awareness, and risk-factor management as central strategies for reducing the burden of CKD.

The experiences of these countries are closely connected to the study. Because, like India and Nigeria, Ethiopia faces resource limitations, implementation challenges, and gaps in public awareness, which influence the effectiveness of CKD prevention and treatment efforts. The United States' focus on early screening underscores a critical gap in Ethiopia, where early detection services remain limited within primary healthcare. Similarly, the policy implementation challenges observed in India and Nigeria mirror Ethiopia's situation, where national-level commitments to CKD management do not always translate into effective practices at treatment centers. Across the globe, the primary strategies for CKD prevention and control focus on early detection, public awareness, and risk factor management, particularly diabetes and hypertension. The integration of CKD management into primary healthcare systems and regular screening for at-risk populations are key measures that have been adopted to reduce the burden of CKD.

The experiences of these countries also have important implications for the choice of a qualitative research design in studying Ethiopia's CKD response. Because, CKD prevention and control involve complex systems that relate to policy implementation, institutional capacity, public awareness, and the lived experiences of healthcare providers and patients. These elements are best explored through qualitative methods, which allow a deeper understanding of contextual realities and the challenges encountered in translating policy into practice. The implementation gaps in India and Nigeria, for example, demonstrate that quantitative indicators alone cannot capture why policies fail or succeed at the facility level. Similarly, stakeholder perspectives highlighted as essential in the global experiences are critical in understanding how Ethiopian health centers operate, the barriers they face, and the extent to which government strategies are effectively enacted. For these reasons, the lessons drawn from the three countries reinforce the appropriateness of a qualitative case-study design, as it enables the researcher to explore the processes, perceptions, and institutional dynamics that shape Ethiopia's response to CKD.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter discusses the methodological approach used to assess the Ethiopian government's response to the impact of Chronic Kidney Disease (CKD). Building upon the research objective articulated in Chapter One: to evaluate the effectiveness of government policies, programs, and interferences in addressing the CKD burden this chapter provides a detailed description of the study design, data collection methods, sampling strategies, data analysis techniques, and ethical considerations that guided the research process. The study applies qualitative approach, to provide a comprehensive and nuanced understanding of the complex factors influencing the government's response and its impact on the health and well-being of individuals affected by CKD.

3.1 Research Methodology

Since the objective of the study is to assess the Ethiopian government's response against the impact of chronic kidney disease, methodologically, the study employed under the general qualitative method it helps to address research questions that require explanation or understanding of social phenomena and their contexts (Ritchie and Lewis, 2003). Strauss and Corbin (1990) suggest that qualitative approaches can be used to better understand any phenomenon which is still little talked about. They can also be used to gain new perspectives on things that are already well talked about, or to obtain more in-depth information that can be difficult to quantitatively express.

Therefore, the researcher assumes that little is known about the topic in the case of Ethiopia. Because, evidence from recent studies clearly demonstrates that little is known about Chronic

Kidney Disease (CKD) in Ethiopia, both among the general population and high-risk groups. Community-based research in Addis Ababa revealed that public knowledge about CKD is generally low, as many respondents scored poorly on measures assessing awareness of kidney disease and its major risk factors (Dagne et al., 2022). Similar findings were documented among hypertensive patients in Adama Hospital, where less than half of participants demonstrated good knowledge, attitudes, or preventive practices related to CKD (Teshome et al., 2024). Limited awareness also exists among diagnosed patients; a study conducted among diabetic outpatients in Northeast Ethiopia found that although more than one-quarter had CKD, only 10.6% had been informed of their condition by a healthcare provider (Shiferaw et al., 2020).

According to Creswell (1998), qualitative research is a process of understanding inquiry based on distinct methodological traditions of inquiry. Since the research focuses on government response against chronic kidney disease (CKD), so the approach is crucial to explore the responses in detail and to find a better option for intervention. Qualitative research is characterized as an evolving model that takes place in a natural setting that enables the researcher to be highly involved in actual experiences (Creswell, 1994).

The aim of understanding is not simply to predict what might happen, but rather to understand in detail the characteristics of the situation and the sense that participants bring about and what is happening to them at the moment. Therefore, the major data collection methods in this approach are document analysis (secondary sources) and personal interview with key informants (primary sources) and observation. Hence, the selection of the qualitative approach is due to its easy applicability to the research problem and suitability of the data collection methods which is relevant to the nature of the study. Within the general qualitative framework, the study is descriptive and exploratory. Based on this, the researcher has tried to describe and explain

Ethiopian government's response to the impact of Chronic Kidney Disease (CKD) in theoretical way. Finally, this qualitative approach helps the researcher to analyze the existing and potential findings from those described and explained data in the form of theme analysis.

3.2 Research Design

A research design refers to overall plan, conceptual arrangement and the procedure or systematic approach that a researcher uses to conduct a scientific study and it is the overall synchronization of identified components and data resulting in a reasonable outcome (Yousaf, 2021).The study employed the case study research design to comprehensively assess the Ethiopian government's response to the impact of Chronic Kidney Disease (CKD). Case study is one of a well-established research approach and the most common qualitative designs. Case study in this study used to investigate the problems at in-depth using multiple methods. To conduct the case study, the researcher may draw upon multiple sources of data, such as observation, interviews and documents, within the general qualitative framework, the study used descriptive and exploratory research analysis design.

It includes a descriptive investigation of Ethiopian government's response to the impact of Chronic Kidney Disease (CKD). Kreuger and Neuman (2006) argue that exploratory approach remains a valuable tool for capturing large amounts of data, especially in study sites where little is known or in societies that orally pass on information to their generations. A descriptive research examines and explains how things are. It also helps to obtain information about the current status of the population / phenomena and to define "what happens" with regard to the variables in a situation and also with regard to the evaluation of attitudes, demographics, desires, practice and procedure (Gay and Airasian, 2000).

3.3 Description of the study settings

This study is conducted in two kidney treatment centers in Addis Ababa, Ethiopia. Addis Ababa is the capital city of Ethiopia and a hub for the political, economical and cultural activities of the country. Addis Ababa has an area of 530, 14 km2 and is divided into 10 sub-cities of 100 Woredas. According to the data obtained from Addis Ababa City Administration Health Bureau there are 11 public and 34 private hospitals in Addis Ababa, which are giving different services for the public. Among the public hospitals St. Paul's Millennium Medical College (SPHMMC) and Zewditu Memorial Hospital were purposively selected as study sites for this research because both are public tertiary hospitals in Addis Ababa that provide nephrology services and renal replacement therapy, making them central to the Ethiopian government's efforts to address chronic kidney disease (CKD).

These hospitals serve large urban populations and function as key implementation points for national non-communicable disease (NCD) and CKD policies, thereby providing rich contexts for examining how government strategies translate into practice. The two hospitals offer complementary settings, with SPHMMC having a strong academic and teaching role, and Zewditu Memorial Hospital serving a high-volume public patient population. Both institutions maintain nephrology outpatient clinics and hemodialysis units, and preliminary discussions confirmed their willingness to allow document review, stakeholder interviews, and observation of CKD-related services. The presence of relevant stakeholders—including nephrologists, general clinicians, nurses, laboratory staff, administrators, and patients—ensures that multiple perspectives on policy implementation can be explored. These criteria collectively justified the purposive selection of SPHMMC and Zewditu Memorial Hospital as appropriate sites for assessing the Ethiopian government's response to CKD.

St. Paul's Hospital Millennium Medical College (SPHMMC)

St. Paul's Hospital Millennium Medical College found in Gulelie Sub City in Addis Ababa. It is a referral hospital in Addis Ababa under the Ethiopian Federal Ministry of Health (FMOH). It is the nation's second largest public hospital, founded by Emperor Haile Selassie with the assistance of the German Evangelical Church in 1961. It became a medical college in 2007 and its core services are medical care, teaching, and research. In the same year, in collaboration with the University of Michigan (UoM), kidney transplant project was started. During the preliminary assessment period (October 2012, E.C), I discussed with the experts and I understood that the hospital has a catchment population of more than five million. The hospital has 350 beds for inpatient service. Besides, it incorporates over 13 departments that include internal medicine, neurology, psychiatry, ophthalmology, radiology, dermatology, genecology, obstetrics, and so on.

The hospital provides diagnosis and treatment service for nearly 800,000 up to 970,000 patients per year. One of the units of the hospital is the Renal Unit. There is a total of 8 beds and 12 dialysis machines in the hospital's renal unit. The total of four nephrologists and more than twenty-four nurses were employed in the renal unit. The unit provides the adult renal patients with follow up outpatient care two days a week. An average of 280 patients is seen per month. This treatment center is chosen because it is the first and the only government-initiated health center that has been providing kidney transplantation as its main objective in the country since the start of its establishment. It also provides dialysis to many numbers of patients with kidney problems. Hence it helps the researcher to gather relevant information that can respond to the research questions.

Zewditu Memorial Hospital

Zewditu Memorial Hospital is located in Addis Ababa, in Kirkos sub-city. The hospital was first founded by Swedish missionaries; later it was rebuilt and operated by the Seventh Day Adventist Church, but was nationalized in 1976 during the Derg regime. The hospital is named after Empress Zawditu. Today it is operated by the Ministry of Health.During the assessment period (October 2012, E.C), I met with the experts and I understood that the hospital could serve a population of more than five million in its catchment. The hospital offers a dialysis service and its facility consists of 6 machines that can serve 20 people per day. The hospital has 300 inpatient beds. Besides, incorporates over 12 departments that include internal medicine, emergency medicine neurology, general surgery, psychiatry and so on. The hospital also works in collaboration with the Ethiopian Kidney Patients Charitable Association (EKPCA), an association founded by volunteers to help people in need of dialysis and kidney transplantation. It is located within the compound of Zeweditu Memorial Hospital. This helps to gain more information from other sources regarding the current status of the epidemic and the measures carried out in response to the disease.

3.4 Target Population and inclusion criteria

The study aims to assess the government's response against the impact of CKD. The subjects of the study were the following: *one,* government health policy makers, who develop health policy, strategies and programs in the country; *two*, government management teams, who administer and monitor the health service at different level in the two institutions; *three,* physicians, who offer service to people with kidney problem in each health care centers.The researcher haschosen the study participants from the target population who can best fit the study objective. In order to screen participants, the researcher has developed some kinds of inclusion criteria because setting

inclusion criteria is necessary to guide the process of data collection to the participants that fit the study under discussion. Richie and Lewis (2003) affirm that prescribing sample criteria is an integral characteristic of purposeful sampling.

The general criteria for inclusion were:

1) Government officials who have role in addressing CKD.
2) Physicians, nurses and other health workers including social workers treating kidney patients in both health centers.
3) Persons who are able to hear and speak Amharic language.
4) Both sexes who consented to participate in the study.

3.5 Sampling technique

The researcher has used purposive sampling method, for their expertise in the subject under consideration and to their experience to choose key informants in the data collection process. Because purposive sampling is a deliberate selection of specific individuals, events or settings of the crucial information and representation of attributes that serve the purpose of the study. Purposive sampling was described as "a type of sampling in which specific environments, individuals, or events are intentionally selected for the important information they can provide that cannot be obtained from other sources" (Maxwell, 1997). Another purposive sampling situation happens when a researcher tries to classify different types of cases for in-depth analysis (Keruger and Neuman, 2006). Researchers use their unique knowledge or expertise about some group to select subjects which represent the community when creating a purposeful sample. In certain cases, purposeful samples are collected on some category after field investigations to ensure that the analysis contains certain types of individuals or persons exhibiting certain

characteristics (Berg, 2001). So purposeful sampling is necessary in gathering subjective information from experts to obtain the information needed. Accordingly, the researcher has chosen the participants from the SPHMMC and Zewditu Memorial Hospital and MoH.

3.6 Sample size

A qualitative research does not have a clearly defined rule for deciding a sample size of a study, but it focuses on collecting relevant data and becoming rich in data to answer all the research questions (Tucket, 2004). Likewise, Krueger &Neuman (2006) asserts that the importance of informants to address research questions is more important than their representativeness in a qualitative research. Further Guest et al(2005), claimed that a sample size can be determined by study purposes and resource availability. Sample sizes, which are mostly small in the purposeful sampling process, may or may not be set before data collection rather it depends on the available resources and time, as well as the objectives of the analysis. Davidson et al. (2002) suggested that sampling continues in qualitative research until the trends arising from the study are completely established, in the sense that different instances have been identified, and further sampling is redundant. Purposive sample sizes are often determined on the basis of theoretical saturation (Family Health International, 2005). Data saturation occurs when little or no new data is produced, and new data fits into the already defined categories (Liamputtong, 2013).Tuckett (2004) also argues that, through constant comparison of results, the judgment that data saturation or data redundancy had been reached was achieved. Hence, the researcher went back and forth between the data and a preliminary thematic description and analysis emerging. In order to generate data on government response to chronic kidney disease some individuals who can best explain the problem under review has intentionally selected. Accordingly, the researcher has

chosen key informants for interview from Minster of Health, SPHMMC,and Zewditu Memorial Hospital.

3.7 Methods of data collection

The researcher has used both primary and secondary data to conduct the research in order to comprehensively assess the Ethiopian government's response to the impact of Chronic Kidney Disease (CKD). Creswell (2007) notes that qualitative research uses multiple data source to get an enough understanding of the issues being studied. Qualitative researchers typically rely on five approaches to gather information, such as participate in setting, actively observing, interviewing, focus group discussion, and reviewing documents (Marshall and Roseman, 2011). Similarly, Corbetta (2003) states that qualitative research data can be gathered by instruments like participant observation, qualitative interview and use of document analysis. Thus, the researcher has used both primary and secondary sources of data to obtain the necessary information that would answer the questions raised by the research. The data collection technique has included key informant interview, observation and document analysis.

3.7.1. Primary data source

As stipulated by Ajayi (2017), primary data is a source of data from observations, case studies, interviews, and surveys, which the researcher directly collects, bring special and novel data. Instruments for data collection was established and used to obtain relevant information from research key informants.

3.7.1.1 Key informant interview (KII)

Key informant interviews are in-depth interviews with selected groups of experts who are most knowledgeable of the organization or problem (Lavrakas, 2008). Likewise, Kikwawila (1994) also claims that a key informant is a person who is exceptionally competent, at least in certain

topics or topics of interest, and with whom the interviewer establishes an ongoing information exchange and discussion relationship. Key informant interviews are "qualitative, in-depth interviews with individuals chosen for their first-hand knowledge of a subject of interest. Interviews are loosely organized, based on a list of topics to be discussed. Key informant interviews resemble a conversation between friends, enabling a free flow of knowledge and ideas. Interviewees spontaneously frame questions, probe for information, and take notes which are later elaborated (USAID,1996).

Accordingly, the researcher has chooses eleven participants for key informant interview. These includes (three) participants from Minster of Health, (four) participants from SPHMMC, and (four) participants from Zewditu Memorial Hospital. A semi-structured interview guide was developed based on the study objectives and relevant literature, with open-ended questions designed to elicit participants' experiences, perceptions, and challenges in implementing CKD-related policies. Key informants, including nephrologists, general physicians, nurses, hospital administrators, and government health officials, were purposively selected for their knowledge and direct involvement in CKD services. Participants were contacted individually, informed about the study, and provided written consent prior to interviews.

Interviews were conducted in private settings within the hospitals, primarily in Amharic, and lasted approximately 45–60 minutes. With participants' permission, interviews were audio-recorded and supplemented by detailed field notes to capture non-verbal cues and contextual information. Audio recordings were transcribed verbatim in Amharic and subsequently translated into English, ensuring the preservation of meaning, technical terminology, and cultural nuances; translation accuracy was confirmed through review by a bilingual expert. Transcribed and

translated data were systematically organized using qualitative data management software, and each transcript was assigned a unique identifier to maintain confidentiality. Prior to analysis, the researcher repeatedly read the transcripts to familiarize with the data and note emerging patterns. Reflexive journaling and peer debriefing were maintained throughout the process to enhance the credibility, confirmability, and trustworthiness of the data. This systematic approach ensured the collection of rich, contextually grounded data suitable for in-depth thematic analysis of the government's response to CKD.

3.7.1.2 Document review/analysis

Document analysis is a systematic method for the review or examination of all written and electronic records. Like other approaches of qualitative study, document analysis involves the evaluation and interpretation of data in order to elicit meaning, gain understanding, and develop analytical information (Corbin and Strauss, 2008; Rapley, 2007). Documents contain text (words) and images which were collected without the involvement of a researcher. Italso include written materials. Accordingly, document analysis was used to gather the necessary data from selected government offices and hospitals that help the researcher to know the government response to chronic kidney disease.

3.7.1.3 Observation

Observation has been used in the numerous social disciplines and fields as an important tool for collecting first-hand information from real natural settings (Bernard, 2006). According to Kikwawila (1994) Observation as a strategy is more than the pure reality of seeing it. To observe means for pay special attention to something that can be explained afterwards, that is to convey what has been observed in words. Data obtained by observation describe the observed phenomena as occurring without artificiality in their natural setting (Frankfort and Nachmias,

1996; Bernard, 1971).Observation requires regular observation of the actions of the peoples and observing, analyzing and understanding their behavior (Gray, 2004). Observation in qualitative research provides comprehensive concise accounts of what is occurring in other environments, which is essential to assess the structure and operation of an institution.

Observation would take place whenever possible as it supported the primary data collected in other data collection instruments. This approach allows the researcher to obtain clear evidence in some important behaviors and non-verbal expression. It also assists the researcher in understanding the case's real situation. Accordingly, at the very beginning, the researcher has developed observational checklists and attempt to observe the availability of infrastructures and assistive devices in the institutions, the suitability of the hospital environment for service provision, the relationships and contact among staff members andpatients. In addition, the researcher will perform the study while respondents participate in various activities such as preparation, facilitation and delivery of service. Detailed notes was taken during all the observations that captured the researchers' attentions and perceptions. The observation has provided a valuable supplement to the data collected by using the methods set out above.

3.7.2. Secondary data sources

Secondary sources of data may include data from government agencies, annual reports or publicly available third-party data originally collected for another reason (Morgan & Kunkel, 2001; Bhattacherjee, 2012). Secondary data obtained from previous studies, policy papers and reports, interviews, discussion papers, books, and electronic information such as online journals, documents, surveys, web pages, and other available published and unpublished materials related to the topic being studied.

3.8. Data analysis

Qualitative data analysis is about interpretation rather than mathematics. Pope et al. (2007) notes that, by looking at various populations and evaluating all knowledge gathered from all informants or events, the data collection continues to resolve the specific study questions and objectives. The data collected in the research using the above-mentioned three data collection instruments (key informant interview, document analysis and observation) was qualitatively analyzed. The records was analyzed manually by coding the text according to various issues of study interest. This allowed the statement made by the different respondents to be grouped according to the various categories of issues. In addition, similarities and response variations obtained from study participants was compared and contrasted during discussion. Since the medium of communication is in Amharic, it would be necessary to translate and archive all the audio & written materials into English. The data collected from different sources were presented and transcribed in various categories based on established themes. A researcher organizes the raw data into conceptual categories of qualitative analysis, and establishes patterns or principles that used for data analysis (Krueger and Newman, 2003). According to Creswell (2007), the qualitative data analysis requires three measures. The first is data collection by arranging the collected data or by grouping them. It involves reading and re-reading and organizing the data obtained in order to gain a general sense of the information and to try to understand its significance. This also involves encoding, database creation, and paving to allow data access from database.

The second step is the analysis of data which consists of activities such as reading the data, memoi.e.to write short words or phrases on the side of field notes or on the foot of photos, coding i.e. to describe and analyze the data from the researcher's own perspective or literature

review perspective (Krueger and Newman, 2003). The third and final stage is report writing, where the researcher presents his / her findings and accounts in text or tabular form. It involves interpretation and discussion of the data collected. Interpretation may be a concept derived by contrasting the results with information gathered from the literatures and theories. Through this method, the researcher may recommend that findings agree with the information reviewed in the literature or disagree with it (Cresswell2007). The thematic discussion is focused on the participants' viewpoints and environment observation. According to Alston and Bowles (2003), qualitative analysis lacks a set of guidelines for analyzing data. In order to generate rich and substantive results, there must be versatility to switch back and forth between and among the steps and tasks, check and recheck their findings on the ground. Finally, collected data was interpreted and analyzed on the basis of research questions. Significant findings presentations are based on various categories that are made according to the homogeneity of the data collection responses. But the information gathered by each approach has been triangulated to bring certain views and extract meaning.

3.9 Data quality assurance

Data triangulation is one of the methods used in data quality control, among other methods, to test the trust worthiness of results. For Bryman (2001), triangulation is a use of more than one approach to the investigation of a research question in order to increase confidence and ensuing findings. Triangulation of data sources is important to analyze data from different sources or informants, to establish coherent thematic rationalization, and to verify the accuracy of the findings. Researchers may use data triangulation in qualitative research, which involves collecting data from various data sources as a tool for verifying and validating their studies (Ndanu & Syombua, 2015).According to Sargeant (2012), in order to encourage the

trustworthiness of results, the researcher should clearly display the sampling procedure, and the selection of participants, using the correct research method that addresses the research question. Similar data obtained from various informants indicates the trustworthiness of the data gathered. Morri (2006) described trustworthiness as an assessment of a research piece's validity using the criteria of credibility, transferability, reliability and conformity. In other words, it is the way the given research removes possible threats. In addition, data collection and comparison enhance the quality of data based on the principles of convergence of ideas and the confirmation of findings. Therefore, the researcher triangulated the data collected by key informant interview, observation, and document analysis to improve the trustworthiness of the findings.

3.10 Ethical consideration

The ethical basis for conducting a research in social work must be taken from the ethics of social work itself. According to Creswell (2003) a researcher has an obligation to respect participants ' rights, wishes, beliefs and desires. Likewise, Lewis (2003) also emphasizes that there should be ethical consideration in any research. To be research-minded means being able to assess whether the design, delivery and reporting of a piece of research has been ethical (Butler, 2002). The researcher has submitted supporting letters to each institution that included in the study before data collection begins at the study site. I have also introduced myself and the research purpose and aim to obtain permission to carry out the fieldwork. Then after I ask for each informant’s consent to take part in the study I have also outlined clearly what the study is all about, and request the respondents for their willingness. I have prepare a consent form to enable participants to understand that they are entitled to participate in the study or not, and/or quit the engagement whenever they wish. I have told them the confidentiality of the information they will provide to me. Then, I tried to establish a rapport with the participants at the study. After that, a

conversation with participants who have participated in the research and who have signed the consent document will determine how secure the time and place for the interview.

While conducting a research, asking questions and taking notes are the formal procedures in data collecting process. Voice and other recording have conducted on the basis of participants ' informed consent. Consequently, a researcher should; protect informants' privacy, respect participants' rights and clarify the intent of the study, be able to deliver findings frankly and freely, correctly cites another person's sources of ideas or writings, as appropriate (Krueger and Newman, 2003; Creswell, 2007).Thus, in the study the researcher has given due consideration to the ethical guideline. The researcher upholds the principle for everyone equally to avoid harm. The researcher has taking special care to ensure participants' dignity, confidentiality and anonymity. The obtained details from the interviews are kept confidential. Transparency was safeguarded by not using identifiable information. In addition, at any point during the interview, the participants were aware of their right not to answer any particular questions and to withdraw from the study.

CHAPTER FOUR

FINDINGS

Introduction

This chapter discusses a comprehensive analysis of the Ethiopian government's response to the impact of Chronic Kidney disease (CKD), drawing upon data gathered from main informant interviews, document reviews, and observations at Zewditu Memorial Hospital (ZMH), St. Paul's Millennium Medical College Hospital (SPHMMC) and Minster of Health (MoH). The study objectives and questions outlined in Chapter One, this examination focused to: (1) examine the government's policies and programs for CKD avoidance and control; (2) search the activities carried out at ZMH and SPHMMC to solve the effects of CKD; (3) examine the challenge faced by the government in addressing CKD; (4) evaluate the contribution of other actors in the government's efforts; and (5) recognize mechanisms for improving the government's response.

The findings offered in this chapter are prepared around the exact research questions. The analysis is told by the theoretical frameworks discussed in Chapter Two, including the Health Belief Model, the Capability Approach, and main beliefs of good governance. Direct quotes from main informants are used to demonstrate main themes and deliver a nuanced understanding of the perspectives of government officials, healthcare providers, and other stakeholders. The chapter generalizes with a summary of the main findings and a discussion of their implications for policy and practice.

Socio demographic profile of the researcher participants

Pseudo name of the participants	code	Sex	Age	Religion	Marital status	Work position	Expe.	Employment status	Place of work	8 March, 2025
Dr. Fekadu	1	M	34	Orthodox	Married	Medical doctor	8 yrs	Permanent	Z.M.H	9March, 2025
Dr. Feyssa	**2**	M	32	Protestant	Single	Medical doctor	6 yrs	Permanent	Z.M.H	13March, 2025
Mrs. Genet	3	F	31	Orthodox	Married	Sociologist	4 yrs	Permanent	Z.M.H	21March, 2025
Dr. Yelekal	**4**	M	41	Orthodox	Married	Medical doctor	15 yrs	Permanent	Z.M.H	22March, 2025
Dr. Iskander	**5**	F	30	Protestant	Single	Medical doctor	3 yrs	Permanent	MoH	4April, 2025
Dr. Nebiyou	**6**	M	36	Orthodox	Married	Medical doctor	9 yrs	Permanent	MoH	6April,2025
Dr. Tsige	**7**	F	30	Orthodox	Single	Medical doctor	4 yrs	Permanent	MoH	9April, 2025
Mrs. Dibaba	**8**	F	28	Protestant	Married	Sociologist	6 yrs	Permanent	SPHMMC	13May, 2025
Dr. Ali	**9**	M	40	Muslim	Married	Nephrologist	13 yrs	Permanent	SPHMMC	17May, 2025
Dr. Sofiya	**10**	M	38	Muslim	Married	Medical doctor	10 yrs	Permanent	SPHMMC	24May, 2025
Dr. Tamru	**11**	M	36	Orthodox	Married	Medical doctor	9yrs	Permanent	SPHMMC	5May,2025

Fig.1 Summary of key informants

4.1 Government Policies, Programs, and Responses for CKD Deterrence and Control

4.1.1. Policy Framework and Integration of CKD into National Health Plans

According to FDRE Ministry of Health, (2015), The Ethiopian government has integrated CKD into its broader Non-Communicable Diseases (NCDs) approach under the Health Sector Alteration Plan (HSTP). This policy framework highlights early detection, prevention, and controlling of CKD through primary healthcare systems. However, the execution of these policies at Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital has been hindered by limited resources, inadequate diagnostic tools, and lack of well-trained healthcare professionals. While the policy framework is all-inclusive, its execution remains inconsistent, particularly in rural areas where healthcare infrastructure is underdeveloped.

As a respondent (5) suggests, *"The Ethiopian government has established commitment to solving CKD by integrating it into the Health Sector alteration Plan (HSTP) and the National Strategic work Plan for Non-Communicable Diseases (NCDs). These policies emphasize early detection, prevention, and organization of CKD. For example, while programs for hypertension and diabetes (key risk factors for CKD) are in place, they are usually underutilized due to limited resources and poor public awareness."* This depicts a gap among policy formulation and execution. While the government has made strides in integrating CKD into its NCD strategy, encounters such as resource restraints, bureaucratic inefficiencies, and disparities in healthcare access persist. By addressing these challenges to inform policy and practice, Ethiopia can develop a more effective and sustainable response to the growing burden of CKD.

Another respondent (7) indicated, *"Ethiopian government has confirmed a commitment to addressing NCDs through its relevant policy documents, e.g., National Health Policy and Health Sector Transformation Plan. These policies recognize the growing burden of NCDs, including diabetes and hypertension, which are major risk factors for CKD. The policies highlight the significance of encouraging healthy lifestyles, early detection of risk factors, and integrated management of chronic conditions. However, the extent to which these broad policies translate into specific, targeted involvements for CKD prevention remains a challenge."*

Applying the health belief model to CKD response encompasses appraising how the government policies align with the model's concept. For example, the Ethiopian Ministry of Health has integrated CKD prevention into its non-communicable diseases strategy, underlining early screening management. As stated by interviewees 2 & 11, *"The application of these policies at Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital faces challenges such as inadequate diagnostic tools and limited healthcare personnel. By solving perceived barriers and emphasizing the benefits of early intervention, the government can improve the effectiveness of its CKD response. This requires strengthening health education programs and ensuring that healthcare facilities are enough equipped to provide preventive services."*

Based on respondent (6), *"Ethiopian government has revealed the growing threat of chronic Kidney disease, although a full complete and explicitly CKD-focused national plan is still something we are working towards. Much of the response integrated with the broader frameworks for non-communicable diseases and primary health care. The focus is on promoting healthy lifestyles, early detection of risk factors, and integrated control of chronic conditions. The focus is commendable; however, it has not reached any form of written strategic plan."*

On the programmatic side, there are a few initiatives that indirectly contribute to CKD prevention. He also stated, *"The National Diabetes Inhibition and Control Program, National Diabetes Prevention and Control Program Guidelines, and the National Hypertension Control Program, National Hypertension Control Program Implementation Manual are crucial because they target those key risk factors. Health Extension Program Implementation Guideline also plays a role in community-based health education, promoting healthy diets and lifestyles. However, a significant gap lies in the specificity of these programs. While they address the risk factors, there isn't always a clear focus on kidney health. For example, the HEP workers are fantastic at what they do, but the amount of time they can devote to spreading awareness about preventing kidney disease is limited."* Personal communication with Health Extension Workers, Addis Ababa, (2025) at both ZMH and SPHMMC, revealed that the frequent use of the "National Health Policy 2016" is displayed in waiting areas and staff rooms.

Discussion with hospital supervisors told that *"While the NHP provides a broad framework for solving NCDs including risk factors for CKD, there is a perceived lack of specific support on CKD prevention and management. Senior doctors and nephrologists continually consult the guidelines, but they are far too general; we need a more specific and actionable plan for kidney-related challenges."*

Review of the Health Sector Alteration Plan II (2020–2025) revealed limited mention of CKD as a priority area. While the plan emphasizes the need to strengthen NCD prevention and control, it lacks specific targets and indicators related to CKD. The document focused more on Diabetes and Heart conditions. The observed confidence in general health policies, coupled with the lack of specific CKD-related guidance in national health plans, suggests a need for greater integration

of CKD into the government's policy framework. The general guidelines seem to have a broad scope but do not address specific needs of patients.

Ethiopian Public Health Association, Position Paper on Chronic Kidney Disease in Ethiopia, (2022) concluded that, while the government has taken steps to address CKD through broader health policies and programs and CKD has been included in Ethiopia's national NCD strategy, which aims to reduce the burden of kidney disease through prevention, early detection, and management, there's a need for a more targeted and all-inclusive national plan, increased investment in prevention and treatment, and improved access to care, predominantly for underserved populations. It's also important to strengthen controlling and evaluation systems to track development and inform decision-making.

4.2 Prevention and Awareness Programs

Personal thought at Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital depicted that patient education initiatives are in place, but their reach is limited by low health literacy and cultural barriers. For example, many patients present with progressive CKD due to delayed diagnosis, highlighting the need for more effective awareness programs.

As a respondent (4) argued, *"The government has initiated health education campaigns to increase awareness about CKD risk factors and promote healthy lifestyles. At Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital, these programs are brought through community outreach and patient education sessions. However, the effectiveness of these operations is limited by low health literacy and cultural barriers. Many patients present with*

advanced CKD due to delayed diagnosis, suggesting that awareness programs are not reaching the most vulnerable populations."

The Health Belief Model (HBM) provides a framework for understanding how individuals perceive the threat of CKD and their willingness to engage in preventive behaviors. In Ethiopia, the government has executed health education programs to raise awareness about CKD risk factors, such as hypertension and diabetes. However, the usefulness of these programs is limited by low health literacy and cultural barriers. For example, many individuals in rural areas may not perceive themselves as susceptible to CKD due to a lack of awareness. At Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital, patient education initiatives are in place, but their reach is often constrained by resource limitations.

Both ZMH and SPHMMC conduct occasional health education sessions for patients in the outpatient waiting areas. I observed that these sessions primarily focus on diabetes and hypertension, with limited mention of CKD or kidney health. The sessions have a very limited presence of patients due to timing constraints and access to the room available to the healthcare workers.

Review of health education materials available at ZMH and SPHMMC confirmed the predominant focus on diabetes and hypertension. Materials on CKD were limited, outdated, and not readily accessible to patients and their families. They had a very limited quantity and could be obtained only on request. Therefore, the limited availability of CKD-specific prevention and awareness programs at the two hospitals suggests a need for greater emphasis on educating the public about risk factors, early symptoms, and prevention strategies.

4.3 Access to Diagnostic and Treatment Services

As stated by respondents (3 & 9), *"At Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital, diagnostic tools such as serum creatinine tests and imaging equipment are available, but their use is limited by cost and availability. Dialysis services are provided at these institutions, but the high cost of treatment makes it inaccessible for many patients. The government's efforts to subsidize treatment costs are commendable, but more needs to be done to confirm unbiased access to life-saving interventions."*

In the case of CKD, this framework indicated the need for equal access to healthcare services, education, and economic opportunity. In Ethiopia, disparities in healthcare access between urban and rural areas limit the ability of individuals to protect or manage CKD at ZMH and SPHMMC. Efforts to offer affordable dialysis and other treatments are commendable, but these facilities remain inaccessible to many because of high costs and geographic barriers.

There are long queues at the dialysis units in both ZMH and SPHMMC. Though nurses and patients indicated that access to dialysis is harshly limited due to the high cost and the limited number of dialysis machines, many patients reported having to wait weeks or months to receive dialysis. Staff members were also witnessed to express great stress in managing patients who needed critical dialysis and were unable to get the service.

According to respondent (10), *"Access to kidney transplantation is still very limited, though there are plans to expand these services. Some medications, like ACE inhibitors and ARBs, are available, but affordability and regular supply can be a challenge. Therefore, the government has subsidized the cost of dialysis and other CKD treatments to make them more affordable for*

patients. However, encounters remain due to the high cost of dialysis machines and limited accessibility in rural areas. Partnerships with NGOs and private sector entities have been recognized to expand access to life-saving treatments."

4.4 Healthcare Infrastructure and Workforce Capacity

A respondent (4) showed that *"The lack of enough healthcare infrastructure and a skilled workforce is a major obstacle to effective CKD management in Ethiopia. Both Zewditu Memorial Hospital and St. Paul Medical College Hospital face challenges such as overcrowding, inadequate medical supplies, and shortage of nephrologists and trained nurses. These restrictions undermine the government's ability to deliver quality CKD care."*

As a respondent (1) argued, *"The lack of adequate healthcare infrastructure and skilled workforce is a main obstacle to effective CKD management. At Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital, challenges such as overcrowding, insufficient medical supplies, and a shortage of nephrologists and trained nurses are prevalent. There is only one nephrologist for every one million people in Ethiopia, which severely limits the ability to offer specialized CKD care. Intensifying healthcare infrastructure and financing workforce training are critical for improving CKD outcomes."*

An investigator indicated, Both ZMH and SPHMMC lack dedicated nephrology clinics. Patients with kidney problems are often seen in general medical clinics or internal medicine departments. The number of trained nephrologists and nurses is inadequate to meet the growing demand for CKD care.

4.5 Multi-sectoral Collaboration and Governance

As stated by respondent (6), *"Partnerships with worldwide organizations and NGOs have helped bridge resource gaps, but more robust governance mechanisms are needed to ensure accountability and transparency. Strengthening governance mechanisms to ensure accountability and transparency in resource allocation and service delivery is critical for building public trust and achieving sustainable outcomes."*

As respondent (7) stated, *"The government has recognized the importance of multi-sectoral collaboration in addressing CKD, involving NGOs, international organizations, and private sector partners. At Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital, partnerships with organizations such as the World Health Organization (WHO) and local NGOs have helped supplement government efforts. Although coordination between stakeholders remains weak, and there is a lack of complete data on CKD prevalence and outcomes to guide policy decisions. Improved governance, transparency, and data-driven decision-making are crucial for enhancing the CKD response."*

According to the interview with the government office (6), *"The government has partnered with NGOs and international organizations to offer community-based screening programs, which serve as cues to action for individuals to seek care. For instance, the Non-Communicable Disease Alliance has supported initiatives to integrate CKD screening into primary healthcare services, and the government has involved stakeholders, including the Ethiopian Medical Association (EMA), NGOs, and international organizations, to address CKD. This collaborative method enhances the effectiveness of interventions but requires stronger coordination to avoid duplication of efforts."*

4.6 Triangulation of Data

Across the data collected through key informant interviews, document analysis, and observations, the Ethiopian government has established commitment to solving CKD by integrating it into the Health Sector alteration Plan (HSTP) and the National Strategic Work Plan for NCDs, although programs for hypertension and diabetes are underutilized due to limited resources and poor public awareness. HSTP II (2020–2025) and the National Health Policy (2016) confirm that CKD is part of NCD strategies but lack CKD-specific targets and guidelines, and at ZMH and SPHMMC there is reliance on general NCD guidelines with limited CKD-focused materials in waiting areas, indicating that policies exist but implementation is inconsistent due to resource limitations, inadequate guidelines, and insufficient CKD-specific focus. Prevention and awareness efforts show that the government has initiated health education campaigns; however, the effectiveness is limited by low health literacy and cultural barriers, while materials focus mainly on diabetes and hypertension with CKD content limited and outdated, and outpatient sessions rarely mention CKD and have limited patient attendance, showing that awareness programs exist but are insufficiently targeted. Diagnostic and treatment services reveal that diagnostic tools such as serum creatinine tests and imaging equipment are available but their use is limited by cost and availability; dialysis services are provided but high cost limits access, hospital records show limited dialysis units and few kidney replacement procedures, and observations show overcrowded units, long waiting weeks, limited machines, and irregular medication supply, meaning services exist but are insufficient due to high cost, limited infrastructure, and geographic barriers. Healthcare infrastructure and workforce capacity remain constrained because of the lack of adequate infrastructure and skilled workforce, with overcrowding, insufficient medical supplies, and shortages of nephrologists and trained nurses at

Zewditu Memorial Hospital and St. Paul Millennium Medical College Hospital, supported by staffing records showing few specialists and no dedicated nephrology clinics, and observations of overcrowded clinics, insufficient equipment, and constrained patient flow, resulting in critical gaps in workforce and infrastructure. Governance and multi-sectoral collaboration show that while collaboration exists, coordination remains weak, with NGOs and WHO support but fragmented efforts; government documents highlight partnerships but lack clear protocols or accountability mechanisms, and hospital-level observations show limited coordinated action and limited NGO support, indicating that multi-sectoral collaboration exists but is fragmented and better governance and structured coordination are needed.

CHAPTERFIVE

DISCUSSIONS, CONCLUSIONS, AND SOCIAL WORK IMPLICATIONS

Introduction

This chapter presents the main results of findings of the research to assess the Ethiopian government's reaction to Chronic Kidney Disease, focusing on policy implementation, systemic obstacles, and service distribution at Zewditu Memorial Hospital and St. Paul's Millennium Medical College Hospital in Addis Ababa. This discussion also links observed findings, theoretical understandings, and appropriate social work policies to solve the Chronic Kidney Disease crisis of Ethiopia. Based on the empirical data from interviews, observations, and document analysis, this unit contains Discussions, Conclusions, and Social Work Implications:

5.1. Discussion

5.1.1 Policy-Implementation Disjuncture:

The commitment of the Ethiopian government to solve Chronic Kidney Disease is obviously shown by its incorporation within national policy agendas like the Health Sector Transformation Plan (HSTP) and the National Strategic Action Plan for Non-Communicable Diseases; policy outlines that emphasize early detection, prevention, and management of the disease, mainly through establishing primary healthcare infrastructure. Despite this strong strategy promise, yet, more implementation challenges persevere; hampering growth toward significant improvements in CKD effects. These barriers comprise persistent resource limitations that hamper access to medical provisions, insufficient diagnostic apparatuses essential for timely and accurate early identification, and shortages of trained healthcare workers, commonly in rural areas where the need is most acute. The unpredictable implementation of screening programs, stopping from insufficient finance and a shortage of improved public awareness movements, additional

Compounds these problems. These operative and resource restrictions are intensified by poor governance that hampers the effective translation of policy into action, leading to delayed implementation and compact impact.

Generally, these complex hindrances, together with persistent inconsistencies in healthcare access, mostly in rural and other remote regions, continue to hinder the successful translation of benevolent strategies into noticeable and sustainable improvements in CKD outcomes for the wider Ethiopian population. Strengthening their promise, the government officials continues to arrange policies for reducing NCDs effects, with a specific pressure on diabetes and hypertension, through the progression of healthy lifestyles, early identification practices, and safeguarding cohesive management procedures for chronic situations. And also the government of Ethiopian has legitimately acknowledged CKD as a public health matter and included it into national strategic plans like the Health Sector Transformation Plan (HSTP) and the National Strategic Action Plan for Non- Communicable Diseases (NCDs). These guidelines highlight early identification, prevention, and management of Chronic Kidney Disease, mainly through primary healthcare.

In spite of CKD's integration into national frameworks, implementation limited by diagnostic deficiencies, staff gaps, and urban-rural injustices. Therefore, a persistent strategy operation gap encounters the efficiency of the CKD reaction, characterized by inadequate change of strategies into noticeable improvements in patient results. Despite the inclusive integration of CKD into national frameworks, such as the Health Sector Transformation Plan (HSTP) and the National NCD Strategy, application at Zewditu Memorial Hospital (ZMH) and St. Paul's Millennium Medical College Hospital (SPHMMC) is meaningfully delayed by lack of chronic diagnostic tools, persistent staff gaps, and stark urban-rural inequalities in resource distribution and access

to care. Specifically, the complete screening programs, which are meant to target hypertension and diabetes as critical CKD risk factors, remain critically under-utilized; the problems are stemmed from due to enduring resource limitations and stubbornly low levels of public knowledge regarding CKD prevention and early detection.

5.1.2 Theoretical Insights on Response Limitations

Governance and administrative contests impede the Ethiopian government's response to CKD, stemming from systemic inefficiencies such as bureaucratic delays, corruption, and poor intergovernmental coordination, which hinder CKD policy execution, coupled with a lack of transparency and accountability in resource allocation. Uneven service delivery, characterized by poor coordination between primary, secondary, and tertiary care levels and inadequate integration of CKD care into existing NCD programs, further compounds these problems. Moreover, limited public understanding, resulting from low community understanding of CKD risk factors and preventive measures, along with inadequate health literacy campaigns to promote behavior change, obstruct early detection efforts.

Theoretically, a Health Belief Model outlook indicates that low perceived susceptibility to CKD, stemming from limited awareness, coupled with high perceived obstacles related to cost and access, delay early prevention and treatment adherence, exacerbated by weak public health campaigns that fail to address cultural and financial obstacles to preventive behaviors.At the end, through the Capability Approach, rural-urban disparities in healthcare access and poverty restrict individuals' capabilities to manage CKD, while underfunded infrastructure and unaffordable cures undermine empowerment.

Using the HBM framework highlights the need to address perceived barriers (e.g., cost of treatment) and focusing the benefits of early intervention to improve the effectiveness of CKD response. Strengthening health education and adequately equipping healthcare facilities are also

Crucial. Ethiopia's CKD response shows significant policy execution gaps. While national frameworks like the HSTP integrate CKD prevention (FDRE Ministry of Health, 2015; execution at ZMH and SPMMC is undermined by diagnostic scarcities, workforce gaps, and urban-rural disparities.

The Health Belief Model depicts main flaws: low public awareness lessens perceived susceptibility to CKD, while financial/cultural barriers (e.g., treatment costs, distrust in healthcare) heighten perceived barriers to care-seeking. Alongside, the Capability Approach exposes systemic inequities: poverty and geographical disparities limit individuals' freedoms to access prevention/treatment. Governance disappointments further worsen these issues bureaucratic delays, corruption, and weak interagency coordination cripples resource allocation and service delivery. Without solving these multidimensional barriers, CKD burdens will increase.

5.1.3 Governance and Administrative Challenges

The Ethiopian government's CKD response is basically hampered by systemic inefficiencies in governance structures. Bureaucratic delays, widespread corruption, and poor intergovernmental coordination mainly impede the execution of CKD policies at both national and facility levels, as verified by inconsistent implementation at Zewditu Memorial Hospital and St. Paul's Millennium Medical College Hospital. These governance failures manifest in a persistent lack of transparency and accountability in resource allocation, where funding and medical supplies fail

to reach forefront health facilities efficiently. Accordingly, fragmented service delivery emerges as a main outcome of these administrative weaknesses. For example, disjointed coordination between federal health authorities and regional bureaus leads to copied efforts, erratic supply chains for dialysis consumables, and uneven distribution of nephrology specialists ultimately

Compromising the quality and accessibility of CKD care.As noted in policy documents, these problem indicated deeper institutional deficits in applying governance principles (e.g., accountability, participation) outlined in Ethiopia's Health Sector Transformation Plan (FDRE Ministry of Health, 2015).Inconsistent CKD care at ZMH and SPHMMC reflects weak oversight and regulation.

Systemic Fragmentation: Critical deficits in healthcare infrastructure, exemplified by limited dialysis access, coupled with financing barriers like high out-of-pocket costs and the absence of robust multi-sectorial collaboration, perpetuate preventable CKD burdens. These healthcare system barriers manifest as resource and workforce deficits, including lacks of nephrologists, dialysis machines, and essential medicines, further limiting treatment capability, besides inadequate training for primary healthcare workers on effective CKD management. This outcome in financial and access inequities. Furthermore, high out-of-pocket costs disproportionately exclude vulnerable populations from accessing necessary care, while the urban-centric focus of services results in a neglect of rural communities.

Stakeholder Engagement Gaps: Significant stakeholder engagement gaps hinder a comprehensive approach to addressing CKD, manifesting as weak multi-sectorial collaboration characterized by limited participation of non-governmental organizations (NGOs), the private sector,andaffectedcommunitiesintheCKDresponse.Compoundingthismatterareinadequate health

information systems, which change to incomplete CKD surveillance data, ultimately hindering the development and implementation of effective, evidence-based interventions.

5.2 Conclusions

Whereas the Ethiopian government has revealed a clear commitment to addressing Chronic Kidney Disease (CKD) through its integration into national health policies and NCD strategies, the effectiveness of these efforts is hampered by persistent implementation challenges. These include limited resources, a lack of essential diagnostic tools, and a lack of trained healthcare personnel mainly in rural areas and bureaucratic inefficiencies that impede the translation of policy into practice. The nation's CKD response remains fragmented and critically under-resourced. Though the Ethiopian government is committed to solving CKD, policy ambitions, such as integrated NCD strategies, are usually unmatched by implementation capacity at treatment centers. This highlights the ongoing deficiencies in governance, seen in accountability gaps, deficits in essential healthcare infrastructure such as dialysis shortages and a lack of effective cross-sectoral collaboration.

Applying theoretical frameworks, predominantly the Health belief models tresses that improving CKD results requires solving perceived barriers to treatment, actively promoting the benefits of early intervention, strengthening public health education, and ensuring that healthcare facilities are adequately equipped to provide preventive services. Significantly, marginalized populations particularly those in rural areas and low-income groups face significant capability deprivation, and severely limiting their opportunities to effectively manage CKD. Therefore, to realize substantial and sustainable improvements in CKD outcomes, the thesis proves that Ethiopia must prioritize systemic reforms. These improvements must include decentralizing services, strengthening integration into primary healthcare infrastructure, and implementing robust

accountability mechanisms to confirm that resources are used effectively and that programs are reaching those most in need.

5.3 Implications to Social Work

This research carries significant implications for social work practice and education, with the potential to improve community support and ultimately improve the lives of individuals and families affected by CKD. To confirm the sustainability of pro-poor financial support mechanisms, social workers must aggressively engage in support for equitable financing policies and robust accountability measures that prioritize the needs of vulnerable populations. In the realm of direct practice, culturally tailored interventions are essential to bridge existing care gaps and progress health literacy, empowering individuals to make informed decisions about their health and well-being.

To prepare future generations of social work professionals, curriculum restructurings must prioritize health justice and governance literacy, providing students with the knowledge and skills to advocate for systemic change and address the social determinants of health that contribute to CKD disparities. Lastly, future research endeavors should adopt a community-led focus, prioritizing models that address the chronic neglect of rural communities and mitigate the devastating financial toxicity experienced by many CKD patients and their families.

By grounding the analysis in Ethiopia's unique socio-political context, this chapter puts forth a social work-centered vision for converting the national CKD response, focusing to make it a powerful driver for achieving health equity and social justice. To effectively solve the identified gaps and problems, specific social work implications emerge across four interconnected

domains: First, Policy requires proactive advocacy for pro-poor financing mechanisms and robust accountability measures to confirm resources are targeted effectively and equitably.

Second, direct Practice requires the development and operation of culturally tailored interventions designed to bridge existing care gaps, improve health literacy, and empower individuals to manage their health effectively.

Third, social work Education demands comprehensive curriculum reforms that center health impartiality principles and equip future practitioners with the knowledge and skills needed for effective governance analysis and policy advocacy. Finally, future Research initiatives must focused community-led models that directly solve the chronic neglect of rural communities and mitigate the devastating financial toxicity experienced by countless CKD patients and their families. Anchored in Ethiopia's socio-political context, this integrated approach advances a social work-centered vision for transforming CKD response into a vehicle for health equity.

5.3.1 Policy and Program

Social workers must advocate for pro-poor health financing reforms, including subsidized dialysis/transplant programs. Policy proposals should prioritize CKD screening integration into Ethiopia’s Health Extension Program and demand budget transparency to curb corruption.

5.3.2 Practice

In the context of Zewditu Memorial Hospital (ZMH) and St. Paul's Millennium Medical College Hospital (SPHMMC), social workers can play a crucial role in bridging socio-cultural obstacles by delivering culturally tailored health education grounded in the Health Belief Model to boost risk perception regarding CKD. The provisions of patient navigation systems also allow them to solve financial and logistical problems to care, thereby enhancing patient access and

engagement. The role of social worker also is demonstrated through facilitating support groups and connecting people and enhancing treatment adherence, social support, and resilience for individuals and families affected by CKD.

5.3.3 Social Work Education

To better equip future practitioners to respond to the challenges of CKD, curriculum reforms in social work education must embed capability modules covering capability-focused approaches to addressing health injustice and promoting equity for vulnerable populations. In addition, training must also include governance analysis skills, empowering future social workers to involve in effective health policy advocacy and promote systemic change. Lastly, this change would also advantage from community-led intervention design that has a focus on low-resource locations, empowering social workers to develop and implement sustainable, culturally sensitive solutions tailored to the specific needs of underserved communities facing the CKD crisis.

5.1.1 Research

Future research must prioritize several key areas to inform effective policy and practice, including quantifying out-of-pocket costs for CKD-affected households to provide crucial data for the development of targeted financial protection policies. As well as, it requires conducting an evaluation on community health worker-led screening models in rural areas. Lastly, more research and investigation need to be done analyzing political economy barriers to governance reform to identify and address systemic obstacles to improving CKD prevention and management in the long term.

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Annexes

Annex 1: Summary of Key Informants/ Interviews cited,

Pseudo name of the participants	Sex	Age	Religion	Marital status	Work position	Experience	Employment status	Place of work	Participants code
Dr. Fekadu	M	34	Orthodox	Married	Medical doctor	8 yrs	Permanent	Z.M.H	No.1
Dr. Feyssa	M	32	Protestant	Single	Medical doctor	6 yrs	Permanent	Z.M.H	No.2
Mrs. Genet	F	31	Orthodox	Married	Sociologist	4 yrs	Permanent	Z.M.H	No.3
Dr. Yelekal	M	41	Orthodox	Married	Medical doctor	15 yrs	Permanent	MoH	No.4
Dr. Iskander	F	30	Protestant	Single	Medical doctor	3 yrs	Permanent	MoH	No.5
Dr. Nebiyou	M	36	Orthodox	Married	Medical doctor	9 yrs	Permanent	AACAHB	No.6
Dr. Tsige	F	30	Orthodox	Single	Medical doctor	4 yrs	Permanent	AACAHB	No.7
Mrs. Dibaba	F	28	Protestant	Married	Sociologist	6 yrs	Permanent	SPHMMC	No.8
Dr. Ali	M	40	Muslim	Married	Nephrologist	13 yrs	Permanent	SPHMMC	No.9
Dr. Sofiya	M	38	Muslim	Married	Medical doctor	10 yrs	Permanent	SPHMMC	No.10
Dr. Tamru	M	36	Orthodox	Married	Medical doctor	9yrs	Permanent	SPHMMC	No.11

Annex 2: Key Informant Interview Guideline for Ministry of Health Officials

I. Personal information of participants

1. Sex…….
2. Age……
3. Religion……...
4. Marital Status……...
5. Family Size…….
6. Educational Level……...
7. Work Position…….
8. Work Experience …….……...
9. Employment Status……...
10. Place of Work …….

II: Questions related to policies and programs

1. What is your organization's vision and mission?
2. How do you perceive the country's burden of chronic kidney disease?
3. Would you think there are a straightforward guidelines or programs to prevent and control chronic kidney disease in Ethiopia?
4. What are the guidelines or programs designed to prevent and control chronic kidney disease in Ethiopia?
    - mention their names
    - state the time they were issued
    - by whom they were prepared

5. What were the conditions that facilitated for establishing the guidelines or programs in relation to chronic kidney disease?
6. What were the constraints in the development of the guidelines or programsin relation to chronic kidney disease?
7. What is the scope of the guidelines or programs in relation to chronic kidney disease?
8. Please tell me about the priority areas of guidelines or programs in relation to chronic kidney disease?
9. What are the goals & targets of the guidelines or programs in relation to chronic kidney disease?
10. How do you see the guidelines or programs in relation to chronic kidney disease with national health policy?
11. What are the roles and responsibilities of the health centers in the guidelines or programs in relation to chronic kidney disease?
12. How does the government organize and coordinate activities in relation to chronic kidney disease?
13. Do you think that the developed policies or programs are helping to prevent and control chronic kidney disease?
14. What is your organization's future plan to prevent and control chronic kidney disease?

III. Questions related to activities carried out

1. Please tell me the government preparation to prevent and control chronic kidney disease? With regarding to:

- Budget allocation
- Health center building

- Medical facilities fulfillment
- Health work force development
- Others issues.

2. What are the activities your organization's does to prevent and control chronic kidney disease? Please tell me in detail.

3. How does your organization monitor and evaluate the activities to prevent and control chronic kidney disease?

4. Please tell me the result of the evaluation? What it indicated?

IV. Questions related to challenges faced

1. What are the major problems your organization faced in preventing and controlling chronic kidney disease? Please tell me in detail.

2. What are the measures your organization's taking to overcome those challenges?

3. What do you suggest to prevent and control chronic kidney disease better than now?

Annex 3: Key Informant Interview Guideline for the Hospitals officials

I. Personal information of participants

1. Sex…….
2. Age……
3. Religion……...
4. Marital Status……...
5. Family Size…….
6. Educational Level……...
7. Work Position…….

8. Work Experience ……..……...
9. Employment Status……...
10. Place of Work …….

II. Questions related to policies and programs

1. What is your organization's vision and mission?
2. How do you see the effects of chronic kidney disease on patients?
3. Do you think the policies or programs in relation to chronic kidney disease consider the situation of your organization? How?
4. What kind of guideline your organization's using to treat patients with chronic kidney disease?
5. What is your organization's future plan to provide better service to patients with chronic kidney disease?

III. Questions related to activities carried out

1. How do you see your organization's readiness to serve chronic kidney disease patients? In relation to.
    - Office structure
    - Bed rooms
    - Health work force
    - Treatment tools
    - Drugs and others.
2. What activities does your organization's do to minimizetheimpact of chronic kidney dise ase? Please tell me in detail.

3. What are the treatments your organization does provide to patients with chronic kidney disease?
4. How do you see the treatments for chronic kidney disease? In terms of
    - Availability
    - Accessibility
    - Quality
    - Acceptability.
5. What kind of support and care your organization's offer for patients with chronic kidney disease? Please tell me in detail.
6. How does your organization handle chronic kidney patient's data?
7. How does your organization build the capacity of the staff to better serve kidney patients?
8. What is the source of the funds for your organization's in minimizing and mitigating the effect of chronic kidney disease?
9. How does the government support your organization work in relation to chronic kidney disease?
10. What are the main supports your organization receives from the government?
11. How does your organization's communicate with the government?
12. How does the organization monitor and evaluate chronic kidney disease related activities?
13. Please tell me the result of the evaluation? What it indicated?

IV. Questions related to challenges faced

1. What are the major problems your organization's faced in minimizing the effect of chronic kidney disease? Please tell me in detail.

2. What are the measures your organization's taking to overcome the challenges?

3. What do you suggest to minimize the effect of chronic kidney disease better than now?

V. Questions related to stakeholders

1. What are the stakeholders working with your organization in minimizing the effect of chronic kidney disease? How do you see the collaboration?
2. What are the resources your organization has got from the stakeholders?
3. How does your organization interact with the stakeholders?

Annex 4: Observation Checklist

I. Infrastructures and facilities

1) There are enough and adequate offices and bed rooms in the hospital.
2) The offices are well furnished with chairs, tables and computers.
3) There is separate and adequate counseling room for kidney patients.
4) There is separate laboratory room to diagnose kidney disease.
5) There are adequate diagnostic facilities in the laboratory room.
6) There is enough essential drug storage.
7) There is enough drug supply for kidney patients in the hospital.
8) There are adequate rest rooms in the hospital.

II. Dialysis/transplantation/rooms

1) There are a separate and adequate dialysis /transplantationroomsin the hospital.
2) There is enough number of dialysis machines.
3) How is the quality of the dialysis machines?
4) The dialysis machines have adequate supportive materials.

5) There are enough spare parts for dialysis machines.

6) The dialysis /transplantation rooms have enough number of beds.

7) How is the safety and cleanness of the dialysis /transplantation rooms?

III. Training and meeting rooms

1) There is separate and adequate training and meeting rooms for the staffin the hospital.

2) Supportive resources and materials for training and meeting are available.

IV. Health work forces

1) There are enough number of doctors and nurses that service kidney patients.

2) There are social workers that provide support and care kidney patients.

3) There are technicians that maintain the dialysis machines.

4) There are adequate clean workers in the hospital.

V. Communication

1) How is the communication among the staff members?

2) How is the communication between the staff and kidney patients?

ክፍልአራት: የቃለመጠይቅመመሪያዎችከጤናጥበቃሚኒስቴርጋርየሚደረግ

I. የተሳታፊዎችየግልመረጃ

1. ፆታ……
2. ዕድሜ……
3. ሃይማኖት……
4. የጋብቻሁኔታ……
5. የቤተሰብብዛት……
6. የትምህርትደረጃ…… …..
7. የስራደረጃ…….
8. የስራልምድ…….....
9. የቅጥርሁኔታ……...
10. የስራቦታ …….

II:ከፖሊሲዎችእናፕሮግራሞችጋርየተያያዙጥያቄዎች

1. የድርጅትህ/ሽራዕይእናተልዕኮምንድንነዉ?
2. የኩላሊትበሽታበሀገሪቱላይእያደረሰያለዉንጫናእንዴትታየዋለህ/ሽ?
3. በኢትዩጲያየኩላሊትበሽታንለመከላከልእናለመቆጣጠርየሚያስችልግልፅየሆኑፖሊሲዎችእናፕሮግራ ሞችአሉብለህታስባለህ/ሽ?
4. በኢትዩጲያየኩላሊትበሽታንለመከላከልእናለመቆጣጠርየተዘጋጁፖሊሲዎችእናፕሮግራሞችየትኞቹና ቸዉ

- ስማቸዉን
- መቸእደተዘጋጁ
- ዋናዋናይዘታቸዉንብትዘረዝርልኝ/ሪኝ?

5. ከኩላሊትበሽታጋርበተያያዘፖሊሲዎችእናፕሮግራሞችእዲዘጋጁምንምንምቹሁኔታዎችነበሩ?
6. ከኩላሊትበሽታጋርበተያያዘፖሊሲዎችእናፕሮግራሞችሲዘጋጁምንምንእንቅፋቶችነበሩ?
7. ከኩላሊትበሽታጋርበተያያዘያሉትፖሊሲዎችእናፕሮግራሞችወሰንየትድረስነዉ?
8. ከኩላሊትበሽታጋርበተያያዘያሉትፖሊሲዎችእናፕሮግራሞችቅድሚያያስለሚሰጣቸዉሁኔታዎችብትነ ግረኝ/ሪኝ?
9. ከኩላሊትበሽታጋርበተያያዘያሉትፖሊሲዎችእናፕሮግራሞችአላማዎችእናግቦችምንምንናቸዉ?
10. ከኩላሊትበሽታጋርበተያያዘያሉትፖሊሲዎችእናፕሮግራሞችላይየጤናዘርፎችሚናዎችእናሃላፊነቶች ምንምንናቸዉ?
11. መንግስትከኩላሊትበሽታጋርበተያያዘያሉትፖሊሲዎችእናፕሮግራሞችለመተግበርየጤናዘርፎችንእን ዴትአድርጎእያዋቀረእናእያቀናጀነዉ?
12. ከኩላሊትበሽታጋርበተያያዘያሉትንፖሊሲዎችእናፕሮግራሞችከሀገሪቱየጤናፖሊሲአንፃርእንዴትታየ ዋለህ/ሽ?

II. ከተሰሩስራዎችጋርየተያያዙጥያቄዎች

1. ከኩላሊትበሽታጋርበተያያዘያሉትንፖሊሲዎችእናፕሮግራሞችለመተግበር …

- ከበጀትምደባ
- ከመሰረተልማትግንባታ

- ከግብዓትአቅርቦት
- ከሰዉሃይልዝግጅትእናከሌሎችነገሮችአንፃርመንግስትያለዉንዝግጁነትብትነግረኝ/ሪኝ?

2. ድርጅታችሁየኩላሊትበሽታበታማሚዎችላይየሚደርሰዉንጉዳትለመቀነስእናለመግታትምንምንስራዎችንእየሰራነዉ? በዝርዝርብትነግረኝ/ሪኝ.
3. ድርጅትህ/ሽየኩላሊትበሽታንበመከላከልእናበመቆጣጠርዙሪያየሚሰሩስራዎችንእንዴትይቆጣጠራል? ይገመግማል?
4. የግምገማዉጤቱእንዴትነዉ? ምንያሳያልብትነግረኝ/ሪኝ?

ክፍልአምስት: የቃለመጠይቅመመሪያዎችከሆስፒታሎችጋርየሚደረግ

I. የተሳታፊዎችየግልመረጃ

1. ፆታ……
2. ዕድሜ……
3. ሃይማኖት……
4. የጋብቻሁኔታ……
5. የቤተሰብብዛት……
6. የትምህርትደረጃ…… …..
7. የስራደረጃ…….
8. የስራልምድ…….....
9. የቅጥርሁኔታ……...
10. የስራቦታ …….

II. ከፖሊሲዎችእናፕሮግራሞችጋርየተያያዙጥያቄዎች

1. የድርጅትህ/ሽራዕይእናተልዕኮምንድንነዉ?
2. የኩላሊትበሽታበታማሚዎችላይእያደረሰያለዉንጉዳትእንዴትታየዋለህ/ሽ
3. ከኩላሊትበሽታጋርበተያያዘያሉትፖሊሲዎችእናፕሮግራሞችየድርጅታችሁንሁኔታያገናዘበነዉብለህ ታስባለህ/ሽ? እንዴት?
4. ድርጅትህ/ሽየኩላሊትበሽታታማሚዎችንለማገልገልምንአይነትመመሪያይጠቀማል?
5. ድርጅትህ/ሽለወደፊትለኩላሊትበሽታታማሚዎችየተሻለአግልግሎትለመስጠትምንእቅዶች ?

III. ከተሰሩስራዎችጋርየተያያዙጥያቄዎች

1. የኩላሊትበሽታታማሚዎችንለማገልገልየድርጅታችሁዝግጁነት….
    - ከቢሮአወቃቀር
    - ከሰዉሃይልዝግጅት
    - ከህክምናመሳሪያዎች
    - ከገንዘብአቅርቦትእና
    - ለሌሎችነገሮችአንጻርእንዴትታየዋለህ/ሽ?
2. ድርጅታችሁየኩላሊትበሽታበታማሚዎችላይየሚደርሰዉንጉዳትለመቀነስእናለመግታትምንምንስ ራዎችንእየሰራነዉ?በዝርዝርብትነግረኝ/ሪኝ.
3. ድርጅትህ/ሽለኩላሊትበሽታታማሚዎችምንምንህከምናዎችይሰጣል?
4. ድርጅታችሁለኩላሊትበሽታየሚሰጠዉንህከምናዎች
    - ከብዛት

- ከተደራሽነት
- ከተቀባይነት
- ከጥራትአንፃርእንዴትታየዋለህ/ሽ?

5. ድርጅታችሁለኩላሊትበሽታታማሚዎችምንአይነትድጋፍእናእንክብካቤያደርጋል? በዝርዝርብትነግረኝ/ሪኝ?
6. ድርጅትህ/ሽየኩላሊትበሽታታማሚዎችመረጃንእንዴትነዉየሚይዘዉ?
7. ድርጅትህ/ሽሰራተኞችለኩላሊትበሽታታማሚዎችየተሻለአገልግሎትእንዲሰጡአቅማቸዉንእንዴትነዉየሚገነባዉ?
8. ድርጅትህ/ሽየኩላሊትበሽታጉዳትንለመቀነስእናለመግታትበሚያደርገዉጥረትላይየገቢምንጮችሁማንነዉ?
9. ድርጅትህ/ሽየኩላሊትበሽታጉዳትንለመቀነስእናለመግታትየሚያደርገዉንጥረትመንግስትእንዴትእየደገፈነዉ?
10. ድርጅትህ/ሽከመንግስትየሚያገኛቸዉአቅርቦቶችምንምንናቸዉ?
11. ድርጅትህ/ሽከመንግስትጋርበምንአይነትመንገድነዉግንኙነትየሚያደርገዉ?
12. ድርጅትህ/ሽየኩላሊትበሽታጉዳትንለመቀነስእናለመግታትየሚሰሩስራዎቸችንእንዴትይቆጣጠራል? ይገመግማል?
13. የግምገማዉጤቱእንዴትነዉ? ምንያሳያልብትነግረኝ/ሪኝ?

IV. ካጋጠሙችግሮችጋርየተያያዙጥያቄዎች

1. ድርጅታችሁየኩላሊትበሽታጉዳትንበመቀነስእናበመግታትስራላይያጋጠሙዋናዋናችግሮችምንምን ናቸዉ? በዝርዝርብትነግረኝ/ሪኝ?
2. ድርጅታችሁለኩላሊትበሽታታማሚዎችበሚሰጠዉድጋፍእናእንክብካቤላይያጋጠሙትዋናዋናእንቅ ፋቶችእናተግዳሮቶችምንምንናቸዉ? በዝርዝርብትነግረኝ/ሪኝ?
3. ድርጅትህ/ሽያጋጠሙትንችግሮችንለመፋታትምንምንእርምጃዎችእየወሰደነዉ?
4. ከኩላሊትበሽታጋርበተያያዘያሉትፖሊሲዎችእናፕሮግራሞችያጋጠሙችግሮችንለመፋታትያግዛሉብ ለህታስባለህ/ሽ?

V.ከባለድርሻአካላትጋርየተያያዙጥያቄዎች

1. የኩላሊትበሽታበመቀነስእናበመግታትስራላይከድርጅትህ/ሽጋርአብረዉየሚሰሩባለድርሻአካላትእነ ማንናቸዉ?ቅንጅቱንእንዴትታይዋለህ/ሽ?
2. ድርጅትህ/ሽከባለድርሻአካላትጋርአንዴትነዉየሚገናኘዉ?
3. ድርጅትህ/ሽከባለድርሻአካላትየሚያገኛቸዉድጋፎችምንምንናቸዉ?

ክፍልስድስት: በምልከታጊዜግንዛቤውስጥየሚገቡነገሮች

I. መሰረተልማቶች

1) በሆስፒታሉዉስጥበቂየሆኑቢሮዎችእናየአልጋክፍሎችአሉ
2) ቢሮዎቹየተሟሉወንበሮች፣ጠረንጴዛዎችእናኮምፒዩተሮችአሏቸዉ
3) ለኩላሊትበሽታታማሚዎችየሚሆኑበቂእናየተለዩየማማከሪያክፍልአለ
4) የኩላሊትበሽታየሚለይበትየተለየየላብራቶሪክፍልአለ
5) የኩላሊትበሽታየሚለይበትየላብራቶሪክፍልበቂመሳሪያዎችአሉት

6) በሆስፒታሉዉስጥበቂየሆነየመድሃኒትክምችትአለ

7) በሆስፒታሉዉስጥለኩላሊትበሽታታማሚዎችበቂየሆነየመድሃኒትአቅርቦትአለ

8) በሆስፒታሉዉስጥየመጸዳጃክፍሎችአሉ

II. የኩላሊትእጥበት / ንቅለ-ተከላ/ክፍሎች

1) በሆስፒታሉዉስጥበቂእናየተለዩየኩላሊትእጥበት /ንቅለ-ተከላ/ክፍሎችአሉ

2) በቂብዛትያላቸዉየኩላሊትእጥበትመሳሪያዎችአሉ

3) የኩላሊትእጥበትመሳሪያዎቹያላቸዉጥራትእንዴትነዉ

4) የኩላሊትእጥበትመሳሪያዎቹበቂየመለዋወጫዕቃዎችአሏቸዉ

5) የኩላሊትእጥበትመሳሪያዎቹበቂአጋዥመሳሪያዎችአሏቸዉ

6) የኩላሊትእጥበት / ንቅለ-ተከላ/ክፍሎቹበቂብዛትያላቸዉአልጋዎችአሏቸዉ

7) የኩላሊትእጥበት / ንቅለ-ተከላ/ክፍሎቹምቾትእናንጽህናምንይመስላል

III. የስልጠናእናየስብሰባክፍል

1) በሆስፒታሉዉስጥበቂእናየተለዩየስልጠናእናየስብሰባክፍሎችአሉ

2) ለስልጠናእናለስብሰባየሚሆኑአጋዥመሳሪያዎችአሉ

IV. የጤናየሰዉሃይሎች

1) የኩላሊትበሽታታማሚዎችየሚያገለግሉበቂዶክተሮችእናነርሶችአሉ

2) የኩላሊትበሽታታማሚዎችየሚደግፉእናየሚከባከቡየማህበረሰብሳይንስባለሞያዎችአሉ

3) የኩላሊትእጥበትመሳሪያዎችየሚጠግኑባለሞያዎችአሉ

4) በሆስፒታሉዉስጥበቂየጽዳትሰራተኞችአሉ

IV. ግንኙነት

1) በሰራተኞችመሀልያለዉግኑኝነትእንዴትነዉ

2) በሰራተኞችእናበኩላሊትበሽታታማሚዎችመሀልያለዉግኑኝነትእንዴትነዉ

3) ድርጅቱከዉጭአካላትጋርያለዉእንዴትነዉየሚገናኘዉ