# KNOWLEDGE OF KIDNEY DISEASE AND COMPLIANCE WITH TREATMENT REGIMENS AMONG RENAL PATIENTS IN A TERTIARY HEALTH INSTITUTION, EDO STATE

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**BENIN CITY**

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## DECLARATION

This is to declare that this research project titled "**KNOWLEDGE OF KIDNEY DISEASE AND COMPLIANCE WITH TREATMENT REGIMENS AMONG RENAL PATIENTS IN A TERTIARY HEALTH INSTITUTION, EDO STATE**" was carried out by **AYENI DAMIAN EVESHODINAMEH** and is solely the result of my work, except where acknowledged as being derived from other person(s) or resources.

**MATRICULATION NUMBER: _____**

**IN THE FACULTY/COLLEGE: NURSING SCIENCES, UNIVERSITY OF BENIN, BENIN CITY.**

**Signature: …….** **Date: …….**

## CERTIFICATION

This is to certify that this research project by **AYENI DAMIAN EVESHODINAMEH** with Matriculation number **BMS2101546** has been examined and approved for the award of **BACHELOR IN NURSING SCIENCE CERTIFICATE.**

**MRS C.C EDO-OSAGIE**

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***(Project Supervisor )*** **Signature & Date**

**PROF. (MRS.) C.E. OMOROGBE**
***Head of Department of Medical Surgical*** _____ **Signature & Date**

**PROF. F.U. OKAFOR**
***Dean of Faculty*** _____ **Signature & Date**

## DEDICATION

This work is dedicated to the Almighty Father, the One who kept me alive and made it possible for me to make it this far. His unending grace and mercy upon my life is immeasurable.

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## ABSTRACT

Chronic Kidney Disease (CKD) poses a significant health challenge in Nigeria, particularly in Edo State, where limited data exist on patient knowledge and treatment adherence. This study assessed the knowledge of CKD, adherence to prescribed treatment regimens, and associated barriers among CKD patients in a tertiary institution in Edo State. A cross-sectional descriptive study was conducted at the University of Benin Teaching Hospital, involving 158 CKD patients selected via convenience sampling. Data were collected using a self-structured questionnaire and analyzed with SPSS version 26.0, employing descriptive statistics and Chi-square tests ($p<0.05$). Findings revealed that 53.2% of respondents had fair knowledge of CKD, primarily sourced from nurses (52.9%), while 28.5% had poor knowledge. Adherence to treatment regimens was generally poor, with only dietary compliance showing a mean score above 2.50. Key barriers to adherence included medication costs, side effects, inaccessible healthcare facilities, dietary restrictions, cultural beliefs, and lack of family support. No significant relationship was found between CKD knowledge and adherence ($p=0.306$), indicating that knowledge alone does not ensure adherence. The study recommends enhanced health educations by nurses and mass media campaigns to improve CKD awareness and address barriers like cost and accessibility. These findings underscore the need for targeted interventions to enhance CKD management in Edo State.



**Keywords:** Chronic Kidney Disease, Knowledge, Treatment Adherence, Barriers.

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# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

Because of its high morbidity, rising frequency, and significant influence on healthcare systems around the world, chronic kidney disease (CKD) is a serious global public health concern (Hill et al., 2022). A progressive and irreversible deterioration in kidney function is the hallmark of chronic kidney disease (CKD), which can result in serious side effects such cardiovascular illness, anemia, bone problems, and end-stage renal disease (ESRD) (Levey et al., 2021). Maintaining overall physiological balance, controlling electrolyte levels, and filtering waste items from the blood are all made possible by the kidneys (Jha et al., 2021). Waste products build up in the bloodstream as kidney function declines, leading to serious health problems and a decline in quality of life (Kidney Disease: Improving Global Outcomes [KDIGO], 2022).

According to Hill et al. (2022), the prevalence of chronic kidney disease (CKD) is expected to be 13.4% worldwide, with sub-Saharan Africa bearing a disproportionately heavy burden. The issue is made worse in this area by elements like delayed diagnosis, restricted access to medical care, and a high prevalence of risk factors including diabetes, hypertension, and infectious diseases (like HIV) (Stanifer et al., 2021). With incidence rates estimated at 10.4%, CKD is becoming more widely acknowledged in Nigeria as an emerging epidemic (Ulasi & Ijoma, 2021). The number of CKD cases in Nigeria's tertiary healthcare facilities in Edo State is increasing, underscoring the necessity of efficient management and prevention measures (Odubanjo et al., 2021).

Clinical therapies alone are not enough to manage chronic kidney disease (CKD) in these institutions. Improving patient outcomes requires a detailed understanding of patients'

awareness of the illness, the factors that contribute to its course, and their compliance with recommended treatment plans (Finkelstein et al., 2021). Effective disease management requires that patients understand chronic kidney disease (CKD), including its etiology, symptoms, and progression (Tuot et al., 2022). But many CKD patients don't know enough about their illness, which can make it harder for them to adequately manage it (Calderón-Margalit et al., 2023). Furthermore, non-adherence to treatment plans, which is frequently impacted by a number of socioeconomic and health-related factors, continues to be a major problem that results in poor health outcomes and higher medical expenses (Karamanidou et al., 2023). In a tertiary institution in Edo State, this study intends to measure adherence to treatment regimens, identify relevant factors, and gauge the understanding of CKD patients.

### 1.2 Statement of the Problem

A major global health concern, chronic kidney disease (CKD) has high rates of morbidity and mortality. Millions of people worldwide suffer with CKD, which places a significant strain on healthcare systems. The two main causes of kidney damage, diabetes and hypertension, are on the rise, contributing to the increased prevalence of chronic kidney disease (CKD) (Kalantar-Zadeh et al., 2021). Effectively managing chronic kidney disease (CKD), addressing patient adherence to treatment plans, and enhancing overall disease outcomes continue to be global challenges despite advancements in medical research.

The situation is especially worrisome in Africa. The management of chronic kidney disease (CKD) presents particular difficulties for the continent, such as restricted access to medical resources, inadequate health literacy, and socioeconomic hurdles that impact the standard of care. According to studies, CKD is less common and less well-known in African nations than in more developed ones. This is made worse by a lack of nephrology services and a poor healthcare system (Muiru et al., 2020). These differences increase the effect of CKD by

causing poor treatment adherence and delayed diagnoses, which makes managing the disease even more difficult.

Nigeria, a prime example of Africa, faces unique difficulties in the management of chronic kidney disease. The high prevalence of chronic illnesses, such as CKD, combined with socioeconomic and educational inequalities, puts a strain on the healthcare system. According to research, patients frequently lack adequate awareness about chronic kidney disease (CKD), which has an impact on their compliance with recommended treatment plans (Okoro et al., 2020). Patients' health behaviors and treatment adherence are also influenced by cultural beliefs and environmental circumstances; stigmatization and traditional medicine have an impact on healthcare-seeking behaviors.The care of chronic kidney disease is a particularly serious issue in the Nigerian state of Edo. Numerous challenges confront patients in this region, such as restricted access to specialized care, financial limitations, and disparities in health literacy. Despite the high prevalence of CKD and its related consequences, little is known about the level of medication adherence and CKD knowledge among patients in this state (Akokuwebe & Idemudia, 2023). Effective management of CKD is made more difficult by Edo State-specific socioeconomic and cultural conditions as well as issues with the local healthcare system. To address these problems and enhance patient outcomes and treatment adherence, a thorough grasp of the local environment is necessary, as are focused treatments. By evaluating patients' understanding of CKD, determining the variables affecting knowledge and compliance, and finally offering suggestions to enhance health outcomes for CKD patients in Edo State, this study seeks to address these urgent concerns.

### 1.3 Objectives of the Study

The aim of this study is to assess the knowledge of chronic kidney disease, associated factors and compliance to treatment regimen among chronic kidney disease patients in tertiary institution in Edo State.

The specific objectives of the study are to:

1. Assess the level of knowledge on chronic kidney disease (CKD) among patients in a tertiary institution in Edo State.
2. Examine the extent to which CKD patients adhere to prescribed treatment regimens in tertiary institution, Edo state
3. Identify potential barriers that affects CKD patients' compliances with treatment

### 1.4 Research Question

1. What is the level of knowledge of chronic kidney disease (CKD) among patients in a tertiary institution in Edo State?
2. To what extent do CKD patients adhere to prescribed treatment regimens?
3. What are the potential barriers that affect CKD patients' compliance with treatment?

### 1.5 Hypothesis

**Null Hypothesis ($H_0$):** Patients' adherence to recommended treatment plans and their degree of knowledge about chronic kidney disease (CKD) in a tertiary healthcare facility in Edo State do not significantly correlate.

**Alternate Hypothesis ($H_1$):** Patients' adherence to recommended treatment plans and their degree of knowledge about chronic kidney disease (CKD) are significantly correlated in a tertiary healthcare facility in Edo State.

## 1.6 Significance of the Study

Numerous aspects of nursing practice, education, and research make this study noteworthy. The results of the study will give nurses important information about the knowledge and compliance levels of patients with chronic kidney disease (CKD), which will help them better customize therapies. Nurses can create more individualized care plans that target particular treatment adherence barriers and ultimately improve patient outcomes by identifying important linked factors that affect patient compliance.

The study will be a vital tool for creating focused educational initiatives in nursing education. By improving their knowledge of CKD management, these programs will give nurses the tools they need to better inform and assist patients. The results will guide the creation of curricula, guaranteeing that practicing nurses and nursing students are equipped to handle the challenges of caring for patients with chronic kidney disease.

Research-wise, this study will add to the body of knowledge by addressing gaps in patient understanding, compliance, and the variables affecting these aspects of managing chronic kidney disease. It will serve as a basis for further research, directing the creation of more thorough investigations and treatments meant to enhance the treatment of CKD. The study's findings may also have an impact on public health policies and procedures, encouraging a more comprehensive strategy for managing chronic kidney disease that incorporates patient education, support, and resource distribution.

## 1.7 Scope of the Study

With an emphasis on important variables like knowledge of chronic kidney disease (CKD), associated factors (like socioeconomic status and access to healthcare), and adherence to treatment regimens (including medication adherence, dietary guidelines, and lifestyle changes), the study's focus is on patients with CKD in a tertiary institution in Edo State.

### 1.8 Operational Definition of Terms

1. **Chronic Kidney Disease (CKD):** a disease in which kidney function gradually deteriorates, perhaps resulting in waste products building up in the blood. The five phases of chronic kidney disease (CKD) range from early-stage mild kidney damage to later-stage severe or total renal failure that necessitates dialysis or kidney transplantation.

2. **Knowledge of CKD**: The level of knowledge that people have about chronic kidney disease, including its causes (diabetes, high blood pressure), its symptoms (fatigue, edema, and changes in urine production), and the methods required to effectively manage it (doctor visits, lifestyle changes, and medication).

3. **Associated Factors:** These are the several factors that can influence how CKD develops, progresses, and is managed. A patient's risk of acquiring chronic kidney disease (CKD), their capacity to manage the condition, and their overall health outcomes can all be influenced by their socioeconomic level (income, education, occupation), health behaviors (diet, exercise, smoking), and access to healthcare services.

4. **Compliance with Treatment Regimen**: This is a measure of how well patients adhere to their recommended CKD treatment regimens. It include taking medications on time, adhering to dietary guidelines (such consuming less salt and protein), and changing one's lifestyle as needed (like getting more exercise or giving up smoking). In order to preserve quality of life and reduce the course of CKD, compliance is essential.

# CHAPTER TWO

# LITERATURE REVIEW

The literature on chronic kidney disease (CKD), patient awareness, adherence to treatment plans, and related factors is thoroughly reviewed in this chapter. Three subheadings, the conceptual review, the theoretical framework, and empirical studies, will be used to discuss it.

## 2.1 Conceptual Review

### 2.1.1 Chronic Kidney Disease (CKD)

In chronic kidney disease (CKD), the kidneys gradually lose their ability to filter waste and extra fluid from the bloodstream as a result of their deteriorating effectiveness over time. Toxin buildup in the body as a result of this gradual degradation might have a detrimental effect on general health. The existence of structural or functional abnormalities in the kidneys that remain longer than three months is what defines chronic kidney disease (CKD), according to Kalantar-Zadeh et al. (2021). These anomalies, which may or may not be linked to a loss in kidney function, can be found by imaging examinations, blood testing, or urine tests.

The glomerular filtration rate (GFR), a crucial indicator of kidney function that quantifies the volume of blood the kidneys filter each minute, is the main basis for classifying chronic kidney disease (CKD). According to Ammirati (2020), the GFR aids in the classification of CKD into five discrete stages, each of which corresponds to the disease's severity.

i. **Stage 1**: This is defined by a normal or high GFR (≥90 mL/min/1.73 m2) and the presence of imaging abnormalities or indicators of kidney injury, such as proteinuria. There may be early indications of injury even while renal function is still mainly unaffected.

ii. **Stage 2**: The GFR ranges from 60 to 89 mL/min/1.73 m² during this phase. There is evidence of kidney tissue damage even though kidney function is still comparatively normal.

iii. **Stage 3**: When the GFR falls between 30 and 59 mL/min/1.73 m2, CKD becomes more noticeable. Mild to moderate symptoms, such as weariness or edema, may start to appear in patients.

iv. **Stage 4**: Severe renal dysfunction is indicated by a GFR of 15 to 29 mL/min/1.73 m², with more noticeable symptoms such as anemia, elevated blood pressure, and altered urine patterns. Treatment is essential at this point to prevent renal failure from developing.

v. **Stage 5**: When the GFR drops below 15 mL/min/1.73 m2, this stage, also referred to as end-stage renal disease (ESRD), takes place. Dialysis or a kidney transplant are required for survival when the kidneys are unable to support regular body functions (Ammirati, 2020).

### 2.1.2 Causes and Risk Factors

There are numerous underlying causes of chronic kidney disease (CKD), many of which are linked to other long-term medical disorders. Diabetes mellitus, especially type 2 diabetes, is one of the leading causes, accounting for almost half of all instances of chronic kidney disease (CKD) globally (Muiru et al., 2020). Over time, high blood sugar levels harm the kidneys' small blood channels, making it harder for them to filter waste. One of the main causes of kidney failure is diabetic nephropathy, a particular kind of kidney damage brought on by diabetes.

The second most frequent cause of CKD is hypertension. Long-term high blood pressure damages renal blood vessels by applying too much force, which results in scarring and

decreased kidney function (Evans et al., 2022). Uncontrolled hypertension raises the risk of cardiovascular problems by hastening the course of chronic kidney disease. A number of additional factors, in addition to diabetes and hypertension, may play a role in the onset and advancement of chronic kidney disease. In certain situations, genetic predispositions are involved; for example, polycystic kidney disease causes kidney cysts that compromise kidney function. Another important risk factor is obesity, which puts extra strain on the kidneys and is frequently associated with both diabetes and hypertension (Ruiz-Ortega et al., 2020). By altering blood flow to the kidneys, cardiovascular disorders, which frequently coexist with chronic kidney disease (CKD), worsen kidney damage.

Chronic kidney disease (CKD) can also be caused by infections and inflammatory illnesses. One inflammatory disease that can cause chronic kidney damage if left untreated is glomerulonephritis, which is an inflammation of the kidney's filtration units. Additionally, it is well established that some lifestyle choices, including smoking, eating poorly, and not exercising, can accelerate the course of chronic kidney disease (CKD), especially in people who are already at risk because of other medical disorders (Ruiz-Ortega et al., 2020).

### 2.1.3 Symptoms and Diagnosis

The fact that chronic kidney disease (CKD) frequently exhibits no symptoms in its early stages can make diagnosis and treatment more difficult. However, symptoms worsen as kidney function deteriorates. High blood pressure, edema, and exhaustion are typical early symptoms (Carney, 2020). Additionally, patients may have altered urination patterns, such as decreased urine production or increased frequency, which may be signs of deteriorating kidney function. More severe symptoms, such as cramping in the muscles, nausea, vomiting, and loss of appetite, may appear as chronic kidney disease (CKD) worsens. These symptoms are frequently linked to uremia, a disorder in which the body accumulates

waste materials and extra fluid (Evans et al., 2022). Complications like anemia, bone disease, and cardiovascular problems can also result from advanced stages of CKD, which lowers quality of life and raises mortality risk. A number of tests and assessments are required to diagnose CKD. Estimating GFR, which shows how well the kidneys are filtering blood, is one of the most crucial diagnostic procedures. Equations that consider a patient's age, sex, and serum creatinine levels—a waste product that accumulates in the blood when kidney function is compromised—can be used to estimate GFR (Neyra & Chawla, 2021). Serum creatinine and urine tests are frequently used to identify indications of renal impairment in addition to estimating GFR. Early signs of chronic kidney disease (CKD) may include high blood creatinine levels or the presence of blood or protein in the urine. To evaluate the kidneys' anatomy and spot any anomalies like cysts or blockages, imaging procedures like CT or ultrasound scans may also be utilized (Neyra & Chawla, 2021). For CKD to be prevented or its progression slowed, early identification is essential. For at-risk groups, such as individuals with diabetes, high blood pressure, or a family history of kidney disease, routine screening can help detect chronic kidney disease (CKD) early on and enable prompt treatment. Important tactics for controlling CKD and averting problems include medication, lifestyle changes, and careful blood pressure and blood sugar monitoring (Carney, 2020).

### 2.1.4 Compliance to Treatment Regimen

The degree to which individuals adhere to the treatment plan that their healthcare providers prescribe is known as compliance, or adherence in modern medical terminology. This adherence includes a variety of actions, such as taking prescription drugs on a regular basis, following dietary guidelines, showing up for follow-up appointments, and making lifestyle changes (Seng et al., 2020). Because Chronic Kidney Disease (CKD) is a progressive

disorder with complicated treatment regimens, adherence is especially important in this context.

Non-compliance can have serious consequences for patients with chronic kidney disease (CKD), such as a faster decline in kidney function, a higher chance of complications, and a higher chance of developing end-stage renal disease (ESRD) (Tesfaye et al., 2021). When kidney function is insufficient to support life without renal replacement therapy, such as dialysis or kidney transplantation, end-stage renal disease (ESRD) occurs. Thus, for CKD patients to manage their symptoms, delay the progression of their condition, and improve their overall quality of life, they must continue to stick to their treatment plans.

Adherence can be especially difficult due to the complex nature of managing chronic kidney disease (CKD), which frequently entails severe food restrictions, complicated pharmaceutical regimens, and frequent monitoring. The ability of a patient to handle these complications and regularly adhere to the recommended treatment plan is essential for effective care. Better adherence has been repeatedly linked to better health outcomes, such as lower hospitalization and higher survival rates, according to studies (Hu et al., 2021).

### 2.1.4 Factors Influencing Compliance

**- Socio-economic Factors:** Adherence to CKD treatment regimens is strongly influenced by socioeconomic considerations. One of the main factors influencing a patient's capacity to adhere to recommended therapies is their income. Financial obstacles may prevent patients with lower incomes from adhering to dietary guidelines, purchasing prescription drugs, or receiving essential medical treatment (Almutary, 2021). For example, patients with little financial means may not be able to afford the high expenses of some drugs or nutritional supplements, which could result in them not following their treatment regimens completely. An further important socioeconomic aspect is education level. Better health literacy, which

increases a patient's comprehension of their illness and the significance of adhering to treatment recommendations, is typically associated with higher educational attainment. Patients with higher levels of education are more likely to understand the reasoning behind intricate treatment plans and, as a result, be better able to properly manage their condition (Okoro et al., 2020). On the other hand, poorer adherence may result from gaps in knowledge about CKD and its treatment caused by lower educational attainment. Misconceptions about the severity of the illness or trouble understanding medical information could be the cause of this ignorance.

**- Psychological Factors**: Treatment adherence is significantly influenced by psychological factors, such as attitudes toward illness and mental health. Patients' adherence behaviors may be influenced by their perceptions of the severity of their chronic kidney disease (CKD), the efficacy of the therapies they are prescribed, and their own ability to follow the regimen. For example, a patient may be less inclined to follow the treatment plan rigorously if they believe that chronic kidney disease (CKD) is a treatable illness with few immediate dangers (Muiru et al., 2020). A decreased level of dedication to adhering to food restrictions, medication schedules, or routine medical checkups may result from this view. Among CKD patients, mental health conditions such anxiety and depression are very common and can have a negative impact on adherence. It might be difficult to stick to treatment regimens when a patient is depressed since it saps their motivation and vitality. Adherence can be made more difficult by symptoms including exhaustion and disinterest, as patients may find it difficult to do essential daily tasks (Lohrasbi et al., 2021). Conversely, anxiety can result in avoidance behaviors, such missing doctor's appointments or not following dietary recommendations, because of increased stress or worry about the illness. Improving adherence and overall illness management requires addressing these mental health issues with suitable therapies, such as counseling or therapy (Hussien et al., 2021).

**- Health System-Related Factors**

Adherence to CKD treatment regimens is also influenced by a number of factors relating to the health system. The accessibility of services is a crucial factor in determining adherence. Patients are more likely to stick to their treatment programs if they can easily access medical facilities, get regular checkups, and receive the therapies they need (Stengel et al., 2021). On the other hand, patient adherence may suffer from gaps in treatment and monitoring brought on by restricted access to medical services or specialist care. For example, patients who live in underserved or rural areas might have trouble getting access to specialized nephrology services, which could make it harder for them to adhere to treatment plans. Another crucial element is the relationship between the patient and the clinician. Patient adherence can be improved by a good connection that is marked by support, trust, and effective communication. Patients are more likely to follow treatment recommendations when they perceive their healthcare practitioners to be communicative, sympathetic, and responsive to their needs (Garcia Sanchez et al., 2022). Patients are more likely to adhere to their treatment programs when they are in a supportive setting created by a good therapeutic alliance. On the other hand, unfavorable experiences, such inadequate communication or a sense of unsupport from medical professionals, might result in discontent and decreased adherence (Evans et al., 2022).

### 2.1.5 Associated Factors

**- Demographic Factors**

Both awareness of Chronic Kidney Disease (CKD) and adherence to treatment plans are significantly influenced by demographic characteristics such age, gender, and ethnicity. An important factor in the management of CKD and treatment compliance is age. Older persons frequently deal with a distinct set of issues that affect their capacity to follow

intricate treatment plans. Effective CKD management is hampered by age-related physiological changes, such as diminished renal function and changed medication metabolism (Shabaka et al., 2021). Treatment strategies for older people are more complicated because they are more likely to have numerous comorbid diseases and be on polypharmacy. Age-related cognitive impairment can make adherence even more difficult since elderly patients may have trouble remembering their prescription regimens or comprehending food limitations. On the other hand, because they have fewer comorbidities and greater cognitive function, younger patients might be better at sticking to their treatment plans. They do, however, have their own set of difficulties, such as adjusting to the long-term effects of CKD and moving from pediatric to adult care (Carney, 2020). The management of CKD is also influenced by gender differences. According to research, women are frequently more likely than males to stick to treatment plans. This can be explained by a number of things, such as variations in social support networks, health literacy, and health-seeking behavior. Better adherence rates may result from women's propensity for proactive health management and generally greater levels of health knowledge (Carney, 2020). This isn't always the case, though, and there are differences in the correlation between adherence and gender. For example, men may be less likely than women to seek routine medical attention or adhere to treatment plans, maybe as a result of social conventions or different perspectives on health and illness (Muiru et al., 2020).

Ethnicity also affects adherence and awareness of CKD. Access to healthcare may be unequal for ethnic minorities, which may have an impact on their awareness and treatment compliance. Lack of culturally relevant educational resources or support services catered to particular ethnic groups may be the cause of these discrepancies (Muiru et al., 2020). Furthermore, the therapy of CKD may be impacted by ethnic differences in the prevalence of risk factors connected to the disease, such as diabetes and hypertension. For instance, these

risk factors may be more prevalent in specific ethnic groups, which might make managing CKD more difficult and have an impact on medication adherence (Alemu et al., 2020). Improving CKD care across a range of populations requires addressing these inequities through focused health education and customized interventions.

### 2.1.6 Socioeconomic and Educational Background

Adherence to CKD treatment regimens is significantly influenced by socioeconomic status and educational attainment.

One important aspect affecting adherence is income. Low-income patients frequently have financial hardships that limit their capacity to pay for prescription drugs, adhere to dietary guidelines, and receive medical care. Due to the inability to pay for prescribed drugs, routine checkups, and required lifestyle modifications, financial constraints may result in non-adherence (Almutary, 2021). Furthermore, patients with lower incomes may find it difficult to receive specialist treatment or maintain a balanced diet, both of which are essential for managing chronic kidney disease (CKD). This could worsen their health and make adherence more difficult (Shabaka et al., 2021).

An important factor in adherence is educational background as well. Better health literacy is typically linked to higher educational attainment, and this improves patients' comprehension of chronic kidney disease (CKD) and the significance of adhering to treatment plans. Patients who receive more education are more likely to understand the intricacies of their treatment regimens, such as the necessity for frequent monitoring, dietary restrictions, and drug schedules (Okoro et al., 2020). Improved disease treatment and increased adherence rates may result from this deeper comprehension. On the other hand, low educational attainment may lead to inadequate health literacy and a restricted comprehension of managing chronic kidney disease. Patients may find it difficult to comply to complicated treatment plans or

make wise health decisions as a result of this knowledge gap, which frequently results in reduced adherence rates and possibly worse health outcomes (Akokuwebe & Idemudia, 2023).

### 2.1.7 Cultural and Environmental Factors

Particularly in areas with distinct cultural settings like Nigeria, cultural and environmental factors have a major impact on CKD management and adherence. Cultural beliefs of sickness play a vital effect in CKD care. Patients' willingness to seek medical attention or follow treatment plans may be impacted by traditional beliefs and the stigma attached to chronic illnesses in various countries, including Nigeria. Traditional medicine and alternative treatments are often preferred, which may not necessarily coincide with standard medical advice (Okaka et al., 2020). This dependence on conventional methods may result in noncompliance with recommended therapies and impact the management of chronic kidney disease as a whole. Cultural views may also effect patients' perceptions of their condition and their dedication to following medical advice, adding to variances in adherence rates.

Another important environmental element influencing the management of CKD is access to care. Inequalities in access to and infrastructure for healthcare in Nigeria can have a major influence on patients' capacity to adequately manage chronic kidney disease. Timely and efficient care may be hampered by a lack of access to expert nephrology services, diagnostic equipment, and treatment facilities (Akokuwebe & Idemudia, 2022). Geographic impediments, such as living in distant places with minimal healthcare facilities, and socioeconomic inequities further exacerbate these issues. Patients in underserved communities may encounter challenges in receiving regular medical care, resulting to gaps in therapy and lower adherence to prescribed regimens (Mahmoud et al., 2023). Improving

CKD management and adherence requires removing these obstacles through better healthcare infrastructure and fair access to care.

## 2.2 Theoretical Review

### 2.2.1 Health Belief Model (HBM)

The Health Belief Model (HBM) is a psychological framework established in the 1950s by social psychologists Irwin Rosenstock, Godfrey Hochbaum, and others to explain and predict health behaviors. According to this theory, a person's health behavior is influenced by how they view health risks as well as the advantages and disadvantages of adopting a particular course of action. The concept is frequently used to explain why people engage in preventative health behaviors as well as to create and implement health interventions.

### 2.2.2 Key Components of the Health Belief Model

- Perceived susceptibility: This term describes how someone feels about their chances of developing a health issue. For instance, a family history of heart disease may lead someone to assume they are at high risk for the ailment. A person is more inclined to take preventive action if they believe they are at greater risk.

- Perceived Severity: This element consists of the person's opinion of the gravity of the health issue and its repercussions. For example, a person may be more motivated to control their blood sugar levels if they think that diabetes would result in serious problems like vision loss or limb amputation.

- Perceived Benefits: This indicates a person's conviction that the suggested course of action will effectively lower risk or severity. For instance, people are more likely to exercise if they think that doing so on a regular basis will greatly reduce their risk of cardiovascular disease.

- Perceived Barriers: This refers to the person's assessment of the challenges associated with embracing a healthy lifestyle. Obstacles may be practical, psychological, or pecuniary. For

example, someone may understand the advantages of eating a healthy diet, but they may view the expense of nutritious food or the work involved in preparing it as major obstacles.
- Cues to Action: These are internal or external stimuli that cause people to act. Internal cues could be experiencing symptoms that indicate a health problem, whereas external cues could be a public health campaign or a doctor's health warning.
- Self-Efficacy: Self-efficacy, which was later added to the model, is the belief in one's own ability to carry out the advised health behavior. Motivation and commitment to healthy practices can be improved by high self-efficacy. For instance, someone is more likely to try and stick with quitting smoking if they think they can do it.

### 2.2.3 Application of theory to the study

**- Perceived Susceptibility:**

Application to CKD: Patients' health behaviors are greatly influenced by their perceptions of their vulnerability to CKD. Patients may be more inclined to follow treatment plans or take preventative actions if they believe they are at high risk for CKD. Alemu et al. (2020) investigated diabetic patients' awareness of CKD in Ethiopia. According to their findings, patients who felt more at risk for chronic kidney disease (CKD) were more proactive in controlling their health by altering their lifestyles and sticking to their treatment plans. This study demonstrates how patient behavior about CKD care is influenced by perceived vulnerability.

**- Perceived Severity**

Application to CKD: How seriously patients take their management and treatment plans depends on how severe they believe their condition to be. Patients may be more inclined to stick with therapy if they think that chronic kidney disease (CKD) would result in serious repercussions like renal failure or cardiovascular problems. Chu et al. (2021) evaluated

patient awareness of chronic kidney disease by a comprehensive review. According to the study, patients were more willing to adhere to recommended treatment plans and modify their lifestyles when they were aware of the serious consequences of chronic kidney disease (CKD), such as end-stage renal disease (ESRD). This is consistent with the HBM element that health behavior is influenced by perceived severity.

**- Perceived Benefits**

Application to CKD: Patients' adherence to treatment plans, including medication and lifestyle modifications, is influenced by their perceptions of the advantages of doing so. Patients may be more inclined to stick to their treatment plans if they realize that it can improve their quality of life and halt the advancement of their illness. Patients who understood the advantages of dietary modifications were more likely to follow suggested diets, according to Hu et al.'s (2021) investigation of adherence to healthy eating patterns among CKD patients. The study emphasizes the perceived advantages component of the HBM, demonstrating that adherence is improved by having a clear awareness of treatment benefits.

**- Perceived Barriers**

Application to CKD: Adherence to CKD therapy can be hampered by obstacles such limited financial resources, limited access to healthcare, and trouble maintaining intricate treatment plans. Improving patient compliance requires recognizing and removing these obstacles. When Lohrasbi et al. (2021) looked at characteristics related to medication adherence in patients with chronic kidney disease (CKD), they found that lack of access to healthcare facilities and financial limitations were major obstacles. This study emphasizes the impact of perceived barriers on adherence and the necessity of focused interventions to lessen these challenges.

**- Cues to Action**

Application to CKD: Patients may be prompted to take the required steps for controlling their condition by cues to action, such as reminders from medical professionals, educational resources, or experiencing symptoms. Seng et al. (2020) assessed the variables influencing medication adherence in patients with pre-dialysis chronic kidney disease (CKD) and discovered that educational interventions and provider reminders were useful indicators to increase adherence. The significance of cues to action in promoting behavior change in the management of chronic kidney disease is demonstrated by this study.

**- Self-Efficacy**

Application to CKD: Patients' adherence to therapy is influenced by their level of confidence in their capacity to properly manage CKD. Better self-management techniques and better health outcomes can result from higher levels of self-efficacy. Tesfaye et al. (2021) evaluated medication non-adherence in patients with chronic kidney disease (CKD) using the theoretical domains framework and discovered that self-efficacy was a major predictor of adherence. Patients were more likely to adhere to their treatment plans regularly if they had faith in their capacity to control their illness.

The HBM's application to CKD studies demonstrates how treatment adherence is influenced by patients' attitudes and beliefs about their illness. Research employing the HBM framework has yielded important information about:

Recognizing Risk Perception: How patients' perceptions of their vulnerability and the severity of chronic kidney disease influence their participation in preventive measures. Finding Barriers and Benefits: What obstacles do patients encounter when trying to follow their treatment plan, and how does their behavior change when they realize the advantages of doing so?

Enhancing Adherence Strategies: How external cues and self-efficacy can help patients stick to their CKD treatment regimens.

## 2.3 Empirical Review

### 2.3.1 Level of Knowledge on Chronic Kidney Disease (CKD)

A population-based study on the epidemiology of chronic kidney disease (CKD) in rural East Africa was carried out by Muiru et al. (2020). A population-based study design was used to investigate the epidemiology and prevalence of chronic kidney disease (CKD) in rural East Africa. The study's primary goal was to determine how much the rural community knew about chronic kidney disease. The knowledge-related results alone showed that individuals had a serious lack of awareness and comprehension of CKD. According to the study, a large number of people in rural areas knew very little about chronic kidney disease (CKD), including its symptoms, risk factors, and the significance of early detection. This ignorance was ascribed to things like restricted access to healthcare education and information. In order to improve knowledge and early identification of CKD in these communities, the study emphasized the necessity of better educational initiatives and awareness campaigns. A study titled Therapeutic insights in chronic renal disease progression was carried out by Shabaka et al. in 2021. A thorough evaluation was employed as the research design, with an emphasis on therapeutic approaches and knowledge regarding the course of chronic kidney disease (CKD). The review provided a comprehensive assessment of current and emerging therapy approaches by synthesizing data from multiple research. The results brought to light a number of therapeutic insights, such as the significance of early intervention and the application of tailored medicines to slow the progression of chronic kidney disease. The evaluation covered a range of therapeutic approaches, including lifestyle changes, new pharmaceuticals, and the management of underlying diseases including diabetes and

hypertension. In order to effectively manage chronic kidney disease (CKD) and improve patient outcomes, the authors stressed the importance of a multidisciplinary approach that includes medication, lifestyle modifications, and routine monitoring. Alemu et al. (2020) carried out a hospital-based cross-sectional study on the prevalence of chronic kidney disease and related factors among patients with diabetes in northwest Ethiopia. A hospital-based cross-sectional study was the research strategy employed, with the goal of identifying risk variables and determining the prevalence of chronic kidney disease (CKD) in diabetic patients. There were 250 people in the study's sample. In terms of knowledge, the results showed that a sizable percentage of the diabetes patients knew very little about chronic kidney disease. In particular, the study found that only 35% of participants knew that diabetes increases the risk of chronic kidney disease (CKD). Less than 30% of patients had sufficient information of the required lifestyle modifications and the significance of routine kidney function monitoring, indicating a very low level of awareness regarding the prevention and management of chronic renal disease. The study found that inadequate information was linked to worse diabetic and chronic kidney disease (CKD) treatment, highlighting the necessity of focused educational initiatives to raise patient awareness and management standards.

A study titled renal illness knowledge and its factors among patients with chronic renal disease was carried out by Okoro et al. (2020). To investigate CKD knowledge, the study used a mixed-methods approach with 100 patients at a tertiary hospital in Nigeria. Overall, patients knew very little about chronic kidney disease. Many patients lacked a thorough awareness of the disease's course, treatment options, and prophylactics. Access to healthcare resources and educational attainment were important knowledge determinants. Patients with more education showed a greater understanding of chronic kidney disease. According to the

study, people who attended CKD education programs and had frequent contacts with medical professionals knew a lot more about the disease than those who didn't.

In Lagos State, Nigeria, Akokuwebe and Idemudia (2023) examined the knowledge and risk perceptions of women of reproductive age regarding the risk factors for chronic kidney disease. In order to determine the degree of awareness and risk perceptions regarding chronic kidney disease (CKD) among women of reproductive age, a cross-sectional survey was employed as the research design. There were 250 people in the study's sample. The results showed that although participants were generally aware of the risk factors for CKD, their degree of specific knowledge was very low. Many women showed a lack of knowledge about the particular risk factors for chronic kidney disease (CKD), such as diabetes and hypertension. A need for focused educational initiatives to raise knowledge and improve accurate risk perception is suggested by the study's finding that risk perceptions frequently did not match real risk variables. In order to raise CKD knowledge and risk awareness among women in Lagos State who are of reproductive age, the authors suggested stepping up public health initiatives.

### 2.3.2 Adherence to Prescribed Treatment Regimen

A comprehensive review and meta-analysis of the literature on the variables influencing medication adherence in patients with chronic renal disease prior to dialysis was conducted by Seng et al. (2020). A systematic review and meta-analysis was the research design used in this study, with the goal of compiling and evaluating the body of existing literature on the subject. The results showed a number of important factors influencing medication adherence, including system-related factors like pharmaceutical accessibility and healthcare provider assistance as well as patient-related aspects like education, health views, and disease understanding. The study underlined the significance of patient education and support

networks in the management of chronic renal disease and the necessity of focused interventions to increase adherence rates.

Hu et al. (2021) conducted a study on adherence to healthy dietary patterns and risk of CKD progression and all-cause mortality: findings from the CRIC (Chronic Renal Insufficiency Cohort) Study. The CRIC (Chronic Renal Insufficiency Cohort) Study data served as the basis for the cohort study research design. The study examined the association between all-cause mortality and the likelihood of chronic kidney disease (CKD) development and adherence to optimal dietary habits. 3,724 people made up the sample size. The results showed that a lower risk of CKD progression and a lower all-cause mortality rate were linked to greater adherence to healthy eating patterns. In particular, participants who followed healthy dietary guidelines more closely were at a significantly lower risk of all-cause death (hazard ratio of 0.83) and CKD development (hazard ratio of 0.79). Promoting good eating habits may be a useful tactic for enhancing patient outcomes, according to the study, which also underlined the significance of nutritional control in CKD.

The study "Factors associated with health literacy and medication adherence in the elderly patients with chronic kidney diseases" was carried out by Lohrasbi et al. in 2021. A cross-sectional study design was employed to examine the connection between medication adherence and health literacy in older patients with chronic renal disease. There were 150 participants in the study. The results showed that medication adherence and health literacy were significantly positively correlated. In particular, patients were more likely to follow their prescription schedules if they had greater health literacy. Additionally, the study found that better comprehension of the illness was linked to higher health literacy, which in turn led to better drug adherence. According to the authors, this population's medication adherence may be enhanced by treatments meant to raise health literacy.

Tesfaye et al. (2021) conducted a study titled medication non-adherence in chronic kidney disease: a mixed-methods review and synthesis using the theoretical domains framework and the behavioural change wheel. The research design used was a mixed-methods review, incorporating both qualitative and quantitative data to analyze medication non-adherence in chronic kidney disease patients. The study utilized the theoretical domains framework and the behavioral change wheel to structure its analysis. The results showed that a number of factors, including patient-related ones (like forgetfulness and a lack of awareness of the significance of medication), healthcare system factors (like complicated medication regimens and insufficient provider support), and socio-environmental factors (like socioeconomic status and social support), all have an impact on medication non-adherence in chronic kidney disease. The study highlighted the need for tailored interventions that address these diverse factors to improve medication adherence among chronic kidney disease patients.

### 2.3.3 Potential Barriers That Affect CKD Patients' Compliance with Treatment

Almutary (2021) assessed kidney disease knowledge among chronic kidney disease patients in the Kingdom of Saudi Arabia among 150 patients in a tertiary institution using a qualitative approach. The study identified financial constraints as the primary barrier, with 40% of participants citing difficulties in affording medications and dietary modifications. This financial burden is a significant obstacle to effective disease management.

Mahmoud et al. (2023) carried out a cross-sectional study to assess public knowledge about chronic kidney disease and factors influencing knowledge level among 200 CKD patients. The study highlighted that logistical issues, such as transportation difficulties and limited access to specialized care, were significant barriers for 35% of participants. These logistical challenges hinder patients' ability to receive consistent and comprehensive care.

Cardol et al., (2022) carried out a focus group study on psychosocial barriers and facilitators for adherence to a healthy lifestyle among patients with chronic kidney disease. Eight semi-structured focus groups were conducted with a purposive sample of 24 patients and 23 health care professionals from four Dutch medical centers. Many psychosocial barriers and facilitators for engagement in a healthy lifestyle were brought forward, such as patients' knowledge and intrinsic motivation, emotional wellbeing and psychological distress, optimism, and disease acceptance. The findings of the inductive analysis matched all fourteen domains of the TDF. The most prominent domains were 'social influences''and 'environmental context and resources', reflecting how patients' environments hinder or support engagement in a healthy lifestyle.

Carney (2020) explored how socio-economic factors affect CKD awareness among 250 patients. The study used stratified sampling and found that higher educational levels and income were positively associated with better CKD knowledge. Specifically, patients with higher educational attainment exhibited a 20% higher knowledge level compared to those with lower educational backgrounds, underscoring the impact of socio-economic status on CKD awareness.

Okaka et al. (2020) conducted a study on late referral and associated factors among chronic kidney disease outpatients in Southern Nigeria. The research design used was a cross-sectional study, which aimed to identify factors associated with late referral in chronic kidney disease (CKD) outpatients. The sample size for the study was 120 participants. The findings revealed that late referral among CKD outpatients was significantly associated with several factors, including inadequate access to healthcare services, lack of awareness about the disease, and socioeconomic barriers. Specifically, patients with lower socioeconomic status and those with limited access to healthcare facilities were more likely to be referred late. The

study highlighted the need for improved awareness programs and better access to healthcare services to reduce the incidence of late referrals and improve patient outcomes.

Evans et al. (2022) focused on healthcare access and provider communication in a study involving 150 CKD patients. The research found that effective communication from healthcare providers improved CKD knowledge by approximately 15%. This underscores the importance of the patient-provider relationship in enhancing disease awareness and the need for clear, supportive communication.

Kvarnström et al., (2021) carried out a scoping review of qualitative research on factors contributing to medication adherence in patients with a chronic condition: a scoping review of qualitative research. They searched Medline Ovid, Scopus, and Cochrane Library from January 2009 to June 2021 to find the most recent original qualitative studies or systematic reviews that addressed the patient-related factors of medication adherence in treating chronic conditions. They used the PRISMA-ScR checklist to ensure the quality of the study. The initial search revealed 4404 studies, of which we included 89 qualitative studies in the scoping review. The studies more often dealt with barriers than facilitators. They classified the factors as patient-specific, illness-specific, medication-related, healthcare and system-related, sociocultural, as well as logistical and financial factors. Information and knowledge of diseases and their treatment, communication, trust in patient-provider relationships, support, and adequate resources appeared to be the critical facilitators in medication adherence from the patient perspective. Patients are willing to discuss their concerns about medications. Better communication and better information on medicines appear to be among the critical factors for patients. The findings of this scoping review may help those who plan further interventions to improve medication adherence.

## 2.4 Summary of Literature

Chronic Kidney Disease (CKD) is a progressive condition where kidney function deteriorates over time. It is diagnosed when kidney abnormalities persist for over three months, with disease stages ranging from normal function with damage markers to end-stage renal disease requiring dialysis or transplantation. CKD is primarily caused by diabetes and hypertension, which impair kidney function through vascular damage. Symptoms often remain asymptomatic in early stages but include fatigue, swelling, and hypertension. Diagnosis involves measuring glomerular filtration rate (GFR) and serum creatinine levels, with early and effective management being crucial to slow progression and control symptoms. The Health Belief Model (HBM) provides a framework for understanding CKD management. It posits that patients' health behaviors are influenced by their perceptions of the severity of their condition, susceptibility to complications, and the benefits versus barriers of adhering to treatment. Studies using HBM indicate that patients' awareness of CKD's severity and their belief in the efficacy of treatment significantly impact their adherence to prescribed regimens. Factors such as perceived barriers, including cost and complexity of treatment, also play a crucial role in influencing patient compliance. Empirical studies reveal varying levels of CKD knowledge among patients, with many demonstrating inadequate understanding of their condition and its management. Factors such as socio-economic status, education level, and cultural beliefs significantly influence knowledge and adherence. Socio-economic factors like income affect access to treatment and medication, while educational background impacts health literacy. Cultural perceptions and environmental factors, including access to healthcare services, also shape CKD management and adherence, with barriers ranging from financial constraints to traditional health beliefs.

# CHAPTER THREE

# RESEARCH METHODOLOGY

This chapter describes the research design, area of study, population of the study, sample and sampling technique, instrument for data collection, validity of the instrument, reliability of the instrument, method of data collection, method of data analysis and ethical consideration used in this study.

## 3.1 Research Design

A cross-sectional descriptive survey design was adopted for this study to assess the knowledge of chronic kidney disease, associated factors and compliance to treatment regimen among chronic kidney disease patients in tertiary institution in Edo State. This approach allows for data collection at a single point in time, providing a snapshot of the current situation among chronic kidney disease patients in the tertiary institution. It is particularly useful for identifying patterns and relationships that can inform future intervention.

## 3.2 Research Setting

This study was carried out in University of Benin Teaching Hospital (UBTH). University of Benin Teaching Hospital is affiliated to the University of Benin (UNIBEN). University of Benin Teaching Hospital was founded in 1973 but the federal government took over the teaching hospital on the 1st April 1975. It is geographically located in Ugbowo community between the boundaries of Egor and Ovia north east local government area of Edo state. In 1973, the University of Benin Teaching Hospital started with about 360 beds, but as at 2019, statistics showed that the teaching hospital currently has approximately 910 beds, with ongoing expansion. This can be regarded as a great improvement and has helped to improve the quality of services rendered by the teaching hospital. The Departments in University of

Benin Teaching Hospital have been increasing over the years creating a wide range of health care services aimed at improving the excellence of the hospital. This institution provides the functions of training, treating and research. Renal unit is currently a unit under the department of Internal Medicine. This specialized unit renders hemodialysis to patients with end stage renal disease as well as those with acute renal failure. The unit currently has five Nephrologists, 3 Senior Registrars and 3 Registrars as well as Intern doctors. Other staff of the unit include trained Nurses, and technicians. There are presently 6 functional dialysis machines.

### 3.3 Target Population

The target population for this study were 230 patients attending the nephrology consultant out-patient clinic. (source; renal unit medical record, UBTH, 2025)

### 3.4 Sample Size Determination

The sample size was calculated as indicated below:

Using Taro Yamane's Formula

$$N = \frac{N}{1+N\,(e)^2}$$

Where

N= Population under study

E= Constant (0.05%) margin error

$$n = \frac{230}{1+230(0.05)}$$

$$n = \frac{230}{1+230(0.0025)}$$

$$n = \frac{230}{1+0.6}$$

$$n = \frac{230}{1.6}$$

n=143.75

with attrition of 10% =14+143.75=157.75

**Therefore, the sample size was 158**

### 3.5 Sampling technique

Convenience sampling was used, where participants were chosen based on their availability or accessibility. In the context of adherence to a treatment regimen for chronic kidney disease in an outpatient setting, convenience sampling involved selecting patients who were easily reachable and visited the clinic regularly.

### 3.6 Instrument for Data Collection

The instrument for data collection in this study was a self-structured questionnaire. This was developed based on the objectives of the study. The questionnaire consisted of four sections with questions carefully drafted, sequenced and constructed to obtain in-depth information that was useful and relevant to the study used.

**Section A:** consist of the demographic data of the participants (Age, sex and marital status).

**Section B:** knowledge on chronic kidney disease (CKD) among patients in a tertiary institution in Edo State.

**Section C:** The extent to which CKD patients adhere to prescribed treatment regimens in tertiary institution, Edo state

**Section D**: Potential barriers that affects CKD patients' compliances with treatment

### 3.7 Validity of the instrument.

The instrument's validity pertained to its capability to accurately measure the intended construct or concept (Surucu & Maslakci, 2020). Researchers assessed various validity types such as content, construct, criterion, and face validity to evaluate the instrument's accuracy. For this research, face and content validity were utilized to validate the research tool. The questionnaire was ensured validation by both the project supervisor and a field expert, and necessary adjustments were implemented by the researcher.

### 3.8 Reliability of the Instrument

The reliability of an instrument referred to its stability and consistency in delivering uniform outcomes when assessing the same criteria under identical circumstances (Surucu & Maslakci, 2020). It essentially gauged how consistently the instrument produced similar results across multiple trials. A reliable instrument is one that could produce the same results if the behavior was measured again by the same scale. The Cronbach's alpha reliability technique was employed in this study. This researcher conducted reliability testing on the instrument by distributing 16 questionnaires, which constituted 10% of the total sample size of 158, to other chronic kidney disease patients in central hospital, benin city (which are outside the sampled population). A coefficient of 0.71 was obtained making the instrument reliable.

### 3.9 Method of Data collection

A well-structured questionnaire was administered to the patients until the required sample size of 158 patients were recruited. The patients were approached in their clinic days, following proper permission from the unit head. The purpose of the study was explained to

them, and the instrument for data collection was administered. Data collection was conducted by the researcher. Data collection lasted for about two weeks.

### 3.10 Method of Data Analysis

The data collected was analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics such as mean, frequency, and percentages was computed to summarize the data. Hypothesis testing was conducted using the Chi-square test of association, with the level of significance set at $p < 0.05$. The results of the analyses were then presented using tables, graphs, frequencies, and percentages to provide a clear overview of the findings.

### 3.11 Ethical Considerations

Ethical approval was obtained from the ethics and research committee of the College of Medical Sciences, University of Benin. Permission was obtained from the Head of Departments in the Department of Nursing Science, University of Benin, to proceed with the research. Before data collection began, participants received detailed explanations about the research's purpose, content, and implications. They were assured of confidentiality, ensuring the protection of their personal and private information. Throughout the research, ethical guidelines were strictly adhered to, including the following considerations:

1. **Confidentiality:** Respondents' information was treated confidentially, with no request for names or addresses in the questionnaire. Participants understood that their responses are confidential and solely used for research purposes. No personal identifiers were used in any document or questionnaire to maintain anonymity.

2. **Voluntary Participation:** Participants was informed of their right to voluntary participation without facing penalties or bias. They can choose to withdraw or decline to provide information at any point if they feel uncomfortable or unsure.

3. **Avoidance of Plagiarism:** Proper citation of all authors used in the study were ensured, both within the content and in the reference page.

# CHAPTER FOUR

## RESULTS

This chapter presents the results of this research. The results consist of findings generated from data collected using semi-structured questionnaires.

**Table 4.1: Socio-demographic characteristics of respondents**

| Variables | Attributes | Frequency | Percentage |
|---|---|---|---|
| Age | 20-25 | 0 | 0.0 |
| (years) | 26-30 | 2 | 0.9 |
| | 31-35 | 10 | 8.7 |
| | 36-40 | 25 | 15.2 |
| | 41-45 | 43 | 27.4 |
| | 46-50 | 29 | 17.0 |
| | Above 50 | 49 | 30.9 |
| Sex | Female | 67 | 42.2 |
| | Male | 91 | 57.8 |
| Marital Status | Single | 20 | 12.6 |
| | Married | 115 | 72.6 |
| | Divorced | 19 | 12.6 |
| | Others | 4 | 2.2 |

**n=158 respondents**

The table above showed socio-demographic characteristics of respondents. Majority (30.9%) of the respondents are above 50years; also majorly males (57.8%). About three quarters (72.6%) of the respondents are married.

**Table 4.2: Knowledge of Chronic Kidney Disease**

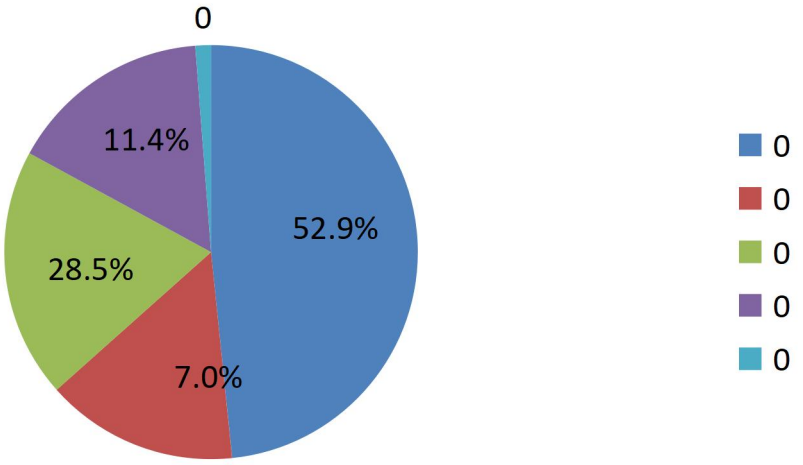
**(N=158)**

| | Frequency | Percentage |
|---|---|---|
| **Which of the following is a common cause of chronic kidney disease (CKD)??** | | |
| Low iron levels | 14 | 8.9 |
| High blood pressure | 82 | 51.9 |
| Vitamin deficiency | 18 | 11.4 |
| Fractures | 44 | 27.8 |
| **What is a common early symptom of CKD?** | | |
| Swelling in the feet and ankles | 120 | 75.9 |
| Sudden loss of vision | 35 | 22.2 |
| Persistent coughing | 3 | 1.9 |
| **Which of the following is a risk factor for developing CKD?** | | |
| Hypertension | 60 | 38.0 |
| Excessive vitamin C intake | 45 | 28.5 |
| Frequent exercise | 29 | 18.4 |
| Eating too much fiber | 24 | 15.2 |
| **Which dietary restriction is often recommended for CKD patients?** | | |
| Reducing sodium intake | 127 | 80.4 |
| Increasing sugar intake | 8 | 5.1 |
| Eating more fatty foods | 5 | 3.2 |
| Avoiding vegetables completely | 18 | 11.4 |
| **Which of the following conditions can lead to CKD?** | | |
| Diabetes and high blood pressure | 90 | 57.0 |
| Muscle cramps | 35 | 22.2 |
| Skin rashes | 7 | 4.4 |
| Vision problems | 26 | 16.5 |
| **Which of the following is an appropriate lifestyle modification for managing CKD?** | | |
| Reducing salt intake | 90 | 57.0 |
| Increasing salt intake | 38 | 24.1 |
| Drinking sugary beverages | 26 | 16.5 |
| Eating more processed foods | 4 | 2.5 |

The table above shows respondents knowledge of chronic kidney disease. It was reported that majority 82(51.9%) opined that high blood pressure is the common cause of CKD, 44(27.8%) reported fractures, 18(11.4%) reported vitamin deficiency while 18(8.9%) reported low iron levels. For the common early symptoms of CKD, 120(75.9%) reported swelling in the feet

and ankle, 35(22.2%) reported sudden loss of vision while 3(1.9%) reported persistent coughing. For risk factor of developing CKD, 60(38.0%) reported hypertension, 45(28.5%) reported excessive vitamin c intake, 29(18.4%) reported frequent exercise while 24(15.2%) reported frequent fiber intake. For dietary restriction recommended for CKD patients, 127(80.4%) reported reducing sodium intake, 8(5.1%) reported increasing sugar intake, 5(3.2%) reported eating more fatty foods while 18(11.4%) reported avoiding vegetables completely. For conditions that can lead to CKD, 90(57.0%) reported diabetes and high blood pressure, 35(22.2%) reported muscle cramps, 7(4.4%) reported skin rashes while 26(16.5%) reported vision problems. For appropriate lifestyle modifications for managing CKD, 90(57.0%) reported reducing salt intake, 38(24.1%) reported increasing salt intake, 26(16.5%) reported drinking sugary beverages while 4(2.5%) reported eating more processed foods.

**Figure 4.1: Sources of Information about knowledge of CKD**




The figure above shows sources of information about CKD. Majority of the respondents 84(52.9%) got their information about CKD from nurses, 18(11.4%) got their information from dieticians, 11(7.0%) got their information from family and friends, 45(28.5%) got their information from the internet.

**Table 4.3: Level of knowledge of CKD**

| | **Frequency** | **Percentage** |
|---|---|---|
| Poor (0-49.9%) | 45 | 28.5 |
| Fair (50-69.9%) | 84 | 53.2 |
| Good (70-100%) | 29 | 18.3 |

Table 4.3 shows the level of knowledge of CKD. 45(28.5%) of the respondents have poor knowledge of CKD, 84(53.2%) have fair knowledge of CKD, while 29(18.3%) have good knowledge of CKD.

**Table 4.4: Adherence to Prescribed Treatment Regimen**

| | | SD | D | A | SA | | Remark |
|---|---|---|---|---|---|---|---|
| 1 | I take my prescribed medications for chronic kidney disease on time | 66(28.7) | 80(34.8) | 46(20.0) | 38(16.5) | 2.24 | Poor |
| 2 | I follow the dietary recommendations given by healthcare provider | 88(38.3) | 83(36.1) | 28(12.2) | 31(13.5) | 2.01 | Poor |
| 3 | I limit my salt intake as advised by your doctor or dietitian | 48(20.9) | 94(40.9) | 70(30.4) | 18(7.8) | 2.25 | Poor |
| 4 | I check my blood pressure at home or in a clinic as part of your CKD management | 27(11.7) | 33(14.3) | 124(53.9) | 46(20.0) | 2.82 | Good |
| 5 | I restrict fluid intake as recommended for managing CKD | 51(22.2) | 88(38.3) | 66(28.7) | 25(10.9) | 2.28 | Poor |
| 6 | I avoid foods high in potassium and phosphorus as advised | 45(19.6) | 65(28.3) | 84(36.5) | 36(15.7) | 2.48 | Poor |
| | **Overall** | | | | | **2.35** | **Poor** |

*Good Adherence = Mean score >2.50*

The table above showed respondents adherence to prescribed treatment regimen. The table indicates that in all the items assessing adherence to prescribed treatment regimen, only item 4 gave a mean score indicating good adherence to prescribed treatment regimen. The other items showed poor adherence to prescribed treatment regimen. The overall mean also indicates poor adherence to prescribed treatment regimen.

**Table 4.5: Barriers Influencing Adherence to Treatment Regimen**

| | A | SA | D | SD | X | Remarks |
|---|---|---|---|---|---|---|
| I find it difficult to afford the cost of medications for managing my chronic kidney disease. | 75(32.6) | 103(44.8) | 38(16.5) | 14(6.1) | 2.96 | Barrier |
| The side effects of my medications make it hard for me to follow the treatment plan. | 39(17.0) | 119(51.7) | 63(27.4) | 9(3.9) | 2.68 | Barrier |
| I have challenges accessing healthcare facilities for regular follow-up appointments. | 18(7.9) | 55(24.2) | 97(42.7) | 57(25.1) | 2.62 | Barrier |
| The dietary restrictions for chronic kidney disease are too difficult for me to follow consistently. | 79(34.5) | 53(23.1) | 43(18.7) | 54(23.6) | 2.56 | Barrier |
| My religious or cultural beliefs make it challenging to follow my treatment plan. | 43(18.7) | 110(47.8) | 47(20.4) | 30(13.0) | 2.58 | Barrier |
| I lack the necessary support from family or friends to help me manage my chronic kidney disease. | 91(39.6) | 84(36.5) | 34(14.8) | 21(9.1) | 2.52 | Barrier |

*Cut off score = 2.50*

The table above showed barriers influencing adherence to treatment regimen among respondents. For all the items measured, it showed that as all the items are all barriers influencing adherence to treatment regimen as their mean scores were above 2.50.

**HYPOTHESIS TESTING**

There is no significant relationship between the level of knowledge of CKD and adherence to treatment regimens among renal patients in a tertiary institution, Benin City.

**Table 4.7: Relationship between level of knowledge and adherence to treatment regimen**

| | **Poor** | **Good** | **DF** | **p** |
|---|---|---|---|---|
| Level of knowledge | | | | |
| Poor (0-49.9) | 49(74.2) | 17(25.8) | 2.368 | 0.306 |
| Fair (50-69.9) | 87(71.3) | 35(28.7) | | |
| Good (70-100) | 35(83.3) | 7(16.7) | | |

The table shows that there is no significant relationship ($p>0.05$) between the level of knowledge of CKD and adherence to treatment regimen. Since the calculated p value is greater than the tabulated p value, the null hypothesis is accepted.

# CHAPTER FIVE

# DISCUSSION OF FINDINGS, CONCLUSION, SUMMARY AND RECOMMENDATION

This chapter entails the discussion of findings, implication for nursing, summary, conclusion, recommendation and suggestion for further studies.

## 5.1 Discussion of Findings

This research work assessed the knowledge of chronic kidney disease, associated factors and compliance to treatment regimen among chronic kidney disease patients in tertiary institution in Edo State. In the course of carrying out this study, three research questions were raised. One hundred and fifty-eight (158) respondents were involved in this study, and data on the social demographic factors of the respondents, knowledge of chronic kidney disease, adherence to treatment regimen and factors influencing adherence to treatment regimen were assessed using a structured questionnaire that was designed by the researcher. The statistical analysis showed no significant relationship between knowledge of CKD and adherence to treatment ($p = 0.306$). This implies that having a good knowledge about CKD did not necessarily translate into better adherence behaviour among patients. Other factors such as medication cost, side effects, limited access to healthcare and social support appeared to paly stronger roles in determining adherence.

### 5.1.1 Knowledge of Chronic Kidney Disease

The findings from this study, shows that the respondents have fair knowledge of chronic kidney disease. This agrees with Muiru et al., (2020) who found out that majority of the respondents had limited knowledge on chronic kidney disease which is in line with Alemu et al., (2020) who reported that the respondents have limited knowledge on chronic kidney

disease. This is also in contrast with Okoro et al., (2020) which reported that the respondents have poor knowledge of chronic kidney disease. Also, a greater percentage of the respondents had their knowledge of chronic kidney disease from nurses, closely followed by internet, followed by dieticians, and then family and friends this is in contrast with Shakhil *et al.* (2024) which showed that majority of the respondents got their knowledge from mass media, family and friends.

### 5.1.2 Adherence to Treatment Regimen

With reference to the findings of this study, the adherence of the respondents to treatment regimen were poor. This is supported by Tesfaye et al., (2021) which revealed poor adherence of the respondents to treatment regimen. This is equally in contrast with Hu et al., (2021) which reported good adherence to treatment regimen.

### 5.1.3 Factors Influencing Adherence to Treatment Regimen

The findings of this study showed that cost of medications, side effect of medications, inaccessibility of healthcare facilities, dietary restrictions, religious or cultural belief and lack of family support are factors influencing adherence to treatment regimen among respondents. This is in contrast with Seng et al., (2020) which reported that education, health beliefs and support from healthcare provider are factors influencing adherence to treatment regimen. This is also in line with Almutary (2021) which reported cost of medication as a factor influencing adherence to treatment regimen.

### 5.1.4 Measures to improve knowledge of chronic kidney disease and focus on specific interventions

With reference to this study, the most effective measure that could be utilized to improve knowledge of chronic kidney disease is through health education, teaching and counselling

these persons on the importance of nutrition to their health. Mass media, family and friends, Radio/TV should liaise with nurses to encourage adherence to lifestyle modifications among adults in general, through the dissemination of useful information.

## 5.2 Implication to Nursing Practice

The nursing practice trend towards health promotion will create opportunities for nurses to strengthen the profession's influence on health promotion through health education.

**Nursing Practice:** Nurses are in the unique position to enlighten these individuals, because they are always in contact with patients/client providing holistic care. For a nurse, to be able to give adequate information, she needs to have a thorough understanding on chronic kidney disease, the effect on their health and measures to improve their practice. Nurses should endeavour to health educate this individuals, as they have the right to this knowledge, which will enable them to make informed decisions on their health. During counselling, it is essential that nurses should be able to identify those healthy foods that patients enjoy, and factors that hinders their adherence to treatment regimen and encourage them to make lifestyle modifications that are achievable. This will help to promote positive health behaviours.

**Nursing Education:** This is what is hoped to be achieved at the end of the day. With good nutritional knowledge of chronic kidney disease, nurses will be better informed to give proper information to clients. Nurses should be involved in giving health education to patients with chronic illness; therefore, emphasis must be laid on teaching patients on discharge in the clinic. Students should be involved in the process.

**Research:** In aspect of research, it increases the awareness of the severity of sedentary lifestyle and its significance for further research, by conducting more research to broaden their knowledge of CKD.

## 5.3 Limitation of the Study

The study was with limitation. The respondents may have been biased in their responses to some items in the instrument, since data retrieved were based on self-reported information from them.

## 5.4 Summary

This study on the knowledge of chronic kidney disease, associated factors and compliance to treatment regimen among chronic kidney disease patients in tertiary institution in Edo State shows the introduction to the study which includes; the background of the study, statement of the problem, objectives of the study, research questions which assessed the knowledge of CKD, adherence to treatment regimen, factors influencing adherence to treatment regimen, social demographic factors and measures to improve the knowledge of CKD. The literature reviewed various works that have previously been carried out in various places concerning knowledge of CKD, adherence to treatment regimen, factors influencing adherence to treatment regimen. It showed that the knowledge of CKD is a global health challenge.

The research methodology, which is a quantitative descriptive design with a population of 158 respondents. The population was selected conveniently and data was collected with the use of questionnaire. Data was analysed using frequency, percentages, mean and standard deviation and were presented in tables where applicable. Most of the respondents have fair knowledge of CKD, have poor adherence to treatment regimen and cost of medications, side effect of medications, inaccessibility of healthcare facilities, dietary restrictions, religious or cultural belief and lack of family support are factors influencing adherence to treatment regimen. Findings of the study were discussed using research questions and relationship with relevant literature reviewed was also carried out.

## 5.5 Conclusion

Chronic Kidney Disease is a global health challenge, which remains prevalent in both developed and developing countries. The findings of this study, suggests that although patients demonstrated fair knowledge of CKD, this knowledge did not show a statistically significant relationship with adherence to treatment regimens. Therefore, strategies to improve adherence should focus not only on knowledge but also on addressing practical barriers such as cost, accessibility, and social support.

From the findings of thus research work, the researcher concluded that majority of the respondents have a fair knowledge of CKD but have poor adherence to treatment regimen and cost of medications, side effect of medications, inaccessibility of healthcare facilities, dietary restrictions, religious or cultural belief and lack of family support are factors influencing adherence to treatment regimen. The lack of a significant relationship between knowledge and adherence suggests that interventions should focus on addressing barriers such as cost and accessibility.

## 5.6 Recommendation

The following recommendations are therefore suggested based on the findings of this study.

1. Health education by nurses to enlighten people on the importance of good dietary changes to health, as most people look up to their medical professionals for information and guidance.
2. Mass media outlets such as television, radio, road jingles and posters etc. should be used to disseminate useful information on the importance of knowledge of CKD.

## 5.7 Suggestions for Further Studies

The researcher recommends that further research may be carried out in the following areas:

1. Factors influencing adherence to physical activity recommendations among patients with CKD in Benin City.

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**APPENDIX**

**QUESTIONNAIRE**

**DEPARTMENT OF NURSING SCIENCES**

**SCHOOL OF BASIC MEDICAL SCIENCES**

**UNIVERSITY OF BENIN,**

**BENIN CITY, EDO**

Dear Respondent,

I am a 500level student of the department of Nursing in the above-named institution. I am carrying out a research study on the topic; "knowledge of chronic kidney disease, associated factors and compliance to treatment regimen among chronic kidney disease patients in tertiary institution in Edo State". Please kindly assist me by indicating your opinion where necessary

Yours faithfully.

**Instruction**: Please do not write your name. Tick the appropriate answer for each question.

**Section A Socio-Demographic Data**

1. Sex: Male [ ] Female [ ]

2. Age: 20-25 years [ ] 26–30 years [ ] 31–35 years [ ] 36–40 years [ ] 41-45years [ ] 46-50 years[ ] above 50 [ ]

3. Marital Status: Single [ ] Married [ ] Divorced [ ] Others [ ]

**Section B: Knowledge on chronic kidney disease (CKD) among patients in a tertiary institution in Edo State**

1. Which of the following is a common cause of chronic kidney disease (CKD)? High blood pressure ( ) Low iron levels ( ) Vitamin deficiency ( ) Fractures ( )
2. What is a common early symptom of CKD? Swelling in the feet and ankles ( ) Sudden loss of vision ( ) Persistent coughing ( ) Excessive hair loss ( )

3. Which of the following is a risk factor for developing CKD? Diabetes ( ) Excessive vitamin C intake ( ) Frequent exercise ( ) Eating too much fiber ( )

4. Which dietary restriction is often recommended for CKD patients? Reducing sodium intake ( ) Increasing sugar intake ( ) Eating more fatty foods ( ) Avoiding vegetables completely ( )
5. Which of the following conditions can lead to CKD? Diabetes and high blood pressure ( ) Muscle cramps ( ) Skin rashes ( ) Vision problems ( )
6. Which of the following is an appropriate lifestyle modification for managing CKD? Reducing salt intake ( ) Increasing salt intake ( ) Drinking sugary beverages ( ) Eating more processed foods ( )

**Section C: Adherence to prescribed treatment regimens**

| S/N | Items | Always | Often | Sometimes | Rarely |
|---|---|---|---|---|---|
| 1. | I take my prescribed medications for chronic kidney disease on time | | | | |
| 2. | I follow the dietary recommendations given by your healthcare provider | | | | |
| 3. | How often do you attend your scheduled clinic appointments for CKD follow-up? | | | | |
| 4. | How often do you limit your salt intake as advised by your doctor or dietitian? | | | | |
| 5. | How often do you exercise or engage in physical activity as part of managing CKD? | | | | |
| 6. | How often do you restrict fluid intake as recommended for managing CKD? | | | | |

**Section D: Barriers influencing adherence to treatment regimen.**

| S/N | Items | Agree | strongly Agree | Disagree | strongly Disagree |
|---|---|---|---|---|---|
| 7. | I find it difficult to afford the cost of medications for managing my chronic kidney disease. | | | | |
| 8. | The side effects of my medications make it hard for me to follow the treatment plan. | | | | |
| 9. | I have challenges accessing healthcare facilities for regular follow-up appointments. | | | | |
| 10. | The dietary restrictions for chronic kidney disease are too difficult for me to follow consistently. | | | | |
| 11. | My religious or cultural beliefs make it challenging to follow my treatment plan. | | | | |
| 12. | I lack the necessary support from family or friends to help me manage my chronic kidney disease. | | | | |