KNOWLEDGE AND PERCEPTION OF CHOLERA AND ITS PREVENTION AMONG ADULT PATIENTS ATTENDING THE GENERAL PRACTICE CLINIC, UNIVERSITY OF BENIN TEACHING HOSPITAL.

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UGBOWO, BENIN CITY

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IN PARTIAL FULFILLMENT OF THE AWARD OF THE DEGREE OF "BACHELOR OF NURSING SCIENCE", FACULTY OF NURSING SCIENCE, UNIVERSITY OF BENIN, BENIN CITY

OCTOBER, 2025

DECLARATION

This is to certify that the research project titled: “KNOWLEDGE AND PERCEPTION OF CHOLERA AND ITS PREVENTION AMONG ADULT PATIENTS ATTENDING THE GENERAL PRACTICE CLINIC, UNIVERSITY OF BENIN TEACHING HOSPITAL” was carried out by EZURUIKE AMARACHI SYLVIA . It is solely the result of my work except where acknowledged as derived from other person(s) or resources.

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CERTIFICATION/APPROVAL

This is to certify that this research project carried out by EZURUIKE AMARACHI SYLVIA with the MATRICULATION Number BMS1800206 has been examined and approved for the award of "Bachelor of Nursing Science (BNSC)" in the faculty of Nursing Science under the supervision of SR. J.N. CHUKWURAH.

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ABSTRACT

This study aimed to assess the knowledge and perception of cholera and its prevention among adult patients attending the General Practice Clinic at the University of Benin Teaching Hospital. A total of 275 patients participated in the study, which utilized a descriptive cross-sectional non-experimental design. Data were collected using a structured questionnaire, and statistical analysis was performed using chi-square at a significance level of 0.05. The results showed that while a majority of participants (70%) were aware of cholera's symptoms and transmission routes, only 45% consistently practiced recommended preventive measures such as proper sanitation and safe water handling. Misconceptions about cholera treatment were identified in 30% of respondents. Chi-square analysis revealed significant associations between knowledge of cholera and factors such as education level ($p=0.04$), occupation ($p=0.03$), and access to healthcare information ($p=0.02$). Despite these gaps, participants with higher levels of education and greater access to health information demonstrated better adherence to preventive practices. The study recommends enhancing public health education, particularly in communities with limited sanitation resources, and improving access to safe water. Additionally, strengthening community outreach programs and addressing misconceptions regarding cholera treatment are essential for better disease prevention. This study provides important insights for healthcare providers and policymakers in developing more effective cholera prevention strategies to reduce the risk of outbreaks and improve public health outcomes.

Keywords: Knowledge, Perception, Cholera, Prevention.

DEDICATION

This project work is dedicated to Almighty God for His Grace, Protection and Mercy throughout the period of this research. It is also dedicated to my parents Mr and Mrs Ezurike Charles for their unwavering love, support and prayers.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Cholera is an acute diarrheal illness caused by Vibrio cholerae, transmitted primarily through the ingestion of contaminated food or water. The disease remains a pressing public health issue, particularly in low- and middle-income countries with poor sanitation, limited access to safe drinking water, and weak public health systems (Adewuyi et al., 2022). According to the World Health Organization (WHO), cholera affects an estimated 1.3 to 4 million people globally each year, with between 21,000 and 143,000 deaths, particularly in regions such as sub-Saharan Africa and South Asia (WHO, 2023; Kieta et al., 2025).

In Nigeria, cholera outbreaks are recurrent and often coincide with the rainy season, during which flooding and inadequate drainage contaminates water sources. These outbreaks are frequently driven by factors such as open defecation, poor sanitation infrastructure, and unsafe drinking water (Elimian et al., 2024). Between 2021 and 2023, the Nigeria Centre for Disease Control (NCDC) reported over 100,000 suspected cholera cases and thousands of deaths, many attributed to delayed treatment and limited public awareness (NCDC, 2023; Amaechi et al., 2024).

Cholera is characterized by profuse watery diarrhea and rapid dehydration, which can be fatal without timely intervention. Prompt recognition and treatment are essential, yet many individuals in affected communities lack sufficient knowledge of the disease's symptoms, transmission, and prevention. Misconceptions—such as attributing the illness to spiritual causes or believing that antibiotics are the only cure—can hinder timely care-seeking behavior (Kayembe, 2025).

Public perception and awareness significantly influence the adoption of preventive practices, including hand hygiene, the consumption of safe water, and early medical intervention (Behkit et al., 2025; Chisanga et al., 2024). Despite the introduction of oral cholera vaccines (OCVs), uptake remains limited in many communities due to misinformation, vaccine hesitancy, and distrust in healthcare systems (Eneh et al., 2024).

Nigeria remains among the countries with the highest cholera burden. From 2010 to 2023, over 500,000 suspected cases and more than 20,000 deaths were reported (NCDC, 2023; Opone et al., 2025). The 2021 outbreak alone accounted for over 111,000 cases and 3,600 deaths across 33 states, with Bauchi, Kano, Jigawa, Zamfara, and Katsina among the hardest-hit areas (James et al., 2024). In Edo State—where the University of Benin Teaching Hospital (UBTH) is located—cholera persists, particularly in rural communities with limited access to clean water and poor sanitation (Adewuyi et al., 2022). In such areas, reliance on unsafe water sources, open defecation, and poor waste disposal practices contribute to continued transmission.

Socioeconomic status, education level, and cultural beliefs play a pivotal role in cholera-related knowledge and behaviors. Studies suggest that individuals with higher education and income levels are more likely to practice effective preventive measures such as boiling water or washing hands regularly (Blankson & Ashie-Nikoi, 2025). Conversely, those with limited education may hold inaccurate beliefs and rely on ineffective traditional remedies (Eneh et al., 2024; Koua et al., 2025).

The General Practice Clinic at UBTH caters to a socioeconomically and educationally diverse population from both urban and rural areas. Patients' knowledge and perceptions about cholera may therefore vary significantly, shaped by personal experience, media exposure, and community-level discussions, which are not always accurate or evidence-based.

Understanding these differences is critical for evaluating the effectiveness of current public health interventions and tailoring future strategies.

This study aims to assess the knowledge and perception of cholera and its prevention among adult patients attending the General Practice Clinic at UBTH. By identifying existing knowledge gaps and evaluating attitudes toward prevention and treatment, the study seeks to inform more targeted and effective public health initiatives to reduce cholera incidence and mortality in Edo State and similar settings.

1.2 STATEMENT OF PROBLEM

Cholera continues to be a significant public health issue in Nigeria, with recurring outbreaks resulting in high rates of illness and death, despite the availability of preventive measures (Eneh et al., 2024). The NCDC reported over 150,000 suspected cases and more than 4,000 deaths between 2021 and 2023, illustrating the ongoing vulnerability of many communities (NCDC, 2023; Adewuyi et al., 2022). Although cholera is primarily transmitted through contaminated food and water, preventing the disease heavily depends on public understanding, attitudes, and adherence to sanitation practices. However, many Nigerians still lack sufficient knowledge about the disease, its transmission, and effective preventive measures. Misconceptions, such as viewing cholera as a supernatural event or relying on traditional herbal treatments, contribute to the persistence of the disease. Furthermore, a failure to recognize the urgency of seeking medical care often leads to severe dehydration and avoidable deaths. Despite various public health campaigns, cholera remains endemic in several states, including Edo State, raising doubts about the effectiveness of current awareness initiatives (Onwunta et al., 2025). A better understanding of the population's knowledge and perceptions is crucial to improving the reach and effectiveness of these interventions.

The University of Benin Teaching Hospital (UBTH) serves as a key healthcare provider in Edo State, catering to individuals from both urban and rural areas, each with varying levels of exposure to health education. The General Practice Clinic, which is often the first point of contact for patients, presents an opportunity to evaluate their knowledge and perception of cholera. Such insights are vital as they can influence health-seeking behaviors and the adoption of preventive measures. However, limited research has been conducted to assess how informed patients at UBTH are about cholera and whether they hold any misconceptions. If patients hold inaccurate beliefs or underestimate the severity of cholera, they may be less likely to engage in essential preventive practices like handwashing, water purification, and seeking timely medical treatment. This study, therefore, aims to evaluate the knowledge and perceptions of cholera and its prevention among adult patients attending the General Practice Clinic at UBTH. By identifying knowledge gaps and misconceptions, the research seeks to offer evidence-based recommendations to enhance public health education and reduce cholera transmission in Benin City and beyond.

1.3 RESEARCH OBJECTIVES

The study aims to assess the knowledge and perceptions of cholera and its preventive measures among adult patients attending general practice clinic in the University of Benin Teaching Hospital (UBTH), Benin City, Edo State. Specifically, it is set to;

1. Assess the level of knowledge of adult patients at the General Practice Clinic, University of Benin Teaching Hospital (UBTH), regarding cholera, its causes, symptoms, and mode of transmission.

2. Determine the perception of adult patients attending General Practice Clinic at the University of Benin Teaching Hospital (UBTH), regarding cholera.

3. Examine the extent of awareness and adoption of cholera preventive measures such as hand hygiene, safe water consumption, and vaccination among adult patients attending General Practice Clinic at the University of Benin Teaching Hospital (UBTH), Benin City, Edo State.

4. To identify the factors that influence the knowledge and perception of adult patients regarding cholera at the General Practice Clinic of the University of Benin Teaching Hospital (UBTH), Benin City, Edo State.

1.4 RESEARCH QUESTIONS

1. What is the level of knowledge of adult patients at the General Practice Clinic, University of Benin Teaching Hospital (UBTH), regarding cholera, its causes, symptoms, and mode of transmission?

2. What is the perception of adult patients attending the General Practice Clinic at the University of Benin Teaching Hospital (UBTH) regarding cholera?

3. To what extent are adult patients attending the General Practice Clinic at the University of Benin Teaching Hospital (UBTH), Benin City, Edo State, aware of and adopting cholera preventive measures such as hand hygiene, safe water consumption, and vaccination?

4. What factors influence the knowledge and perception of adult patients regarding cholera at the General Practice Clinic of the University of Benin Teaching Hospital (UBTH), Benin City, Edo State?

1.5 HYPOTHESES

1. There is no significant relationship between the level of knowledge of adult patients at the General Practice Clinic, University of Benin Teaching Hospital (UBTH), and their overall perception of cholera.

2. There is a significant relationship between the social demographic correlates of adult patients at the General Practice Clinic, University of Benin Teaching Hospital (UBTH), and their level of knowledge of cholera and its preventive measures.

1.6 SIGNIFICANCE OF THE STUDY

This study has significant implications for healthcare providers, public health officials, policymakers, and the general population. For healthcare providers, it will serve as a resource for developing patient education programs that promote preventive measures like hand hygiene, safe drinking water, and vaccination. Given UBTH's diverse patient population, the study will help determine the effectiveness of existing awareness campaigns and the need for additional interventions. Public health officials and policymakers can also use the research to develop more targeted cholera prevention strategies.

The study has the potential to improve community health outcomes by increasing awareness of cholera prevention. If adult patients at UBTH are well-informed, they can influence their communities by promoting safer hygiene and sanitation practices. This can contribute to reducing cholera transmission, especially in high-risk areas with poor access to clean water. The study may also highlight the need for community-based interventions such as public awareness campaigns and vaccination drives.

Additionally, this research will contribute to academic literature on cholera awareness and prevention, serving as a reference for future public health studies. Researchers can build on its findings to explore behavioral interventions, socio-cultural influences on disease perception, and the effectiveness of health education programs. Ultimately, the study aims to translate knowledge into action, helping to protect vulnerable populations from the devastating effects of cholera..

1.7 SCOPE OF THE STUDY

The study is delimited to adult patients attending General Practice Clinic at the University of Benin Teaching Hospital (UBTH), Benin City, Edo State.

1.8 OPERATIONAL DEFINITION OF TERMS

1. Cholera: A severe diarrheal disease caused by Vibrio cholerae bacteria, primarily transmitted through contaminated food and water.

2. Knowledge: The awareness and understanding adult patients have regarding cholera, including its causes, symptoms, transmission, and prevention. In this study, knowledge will be assessed based on patients' ability to correctly identify risk factors, symptoms, and effective preventive measures.

3. Perception: The beliefs, attitudes, and views adult patients hold about cholera, its severity, and the importance of prevention. This study will evaluate whether patients perceive cholera as a serious health threat and whether they believe in the effectiveness of preventive measures such as hygiene and vaccination.

4. Prevention: The actions and strategies aimed at reducing the spread of cholera, including hand hygiene, safe water consumption, proper sanitation, and vaccination. In this study, prevention refers to the level of awareness and adoption of these measures among adult patients attending the General Practice Clinic at UBTH.

5. General Practice Clinic (GPC): A unit at UBTH where patients see consultants for various health conditions. In this study, it represents the setting where adult patients' knowledge and perception of cholera are assessed.

6. Adult Patients: Individuals aged 18 years and above who seek medical care at the General Practice Clinic of UBTH. For this study, adult patients serve as the target population whose knowledge and perception of cholera are evaluated.

CHAPTER TWO

LITERATURE REVIEW

A literature review is a search and evaluation of the available literature in a given subject or chosen topic area (Sobocan et al., 2020). Literature in this study was reviewed under the following subheadings; conceptual review, theoretical framework, empirical review and summary of literature review

2.1 CONCEPTUAL REVIEW

2.1.1 Overview of Cholera

Cholera is an acute diarrheal disease caused by the ingestion of food or water contaminated with the bacterium Vibrio cholerae. It is one of the most rapidly fatal infectious diseases known, capable of causing death within hours if not promptly treated (Amaechi et al., 2024). The bacterium produces a potent cholera toxin that disrupts normal electrolyte and water absorption in the small intestine, leading to profuse, watery diarrhea—often described as "rice water stools"—accompanied by vomiting, leg cramps, and rapid dehydration. The disease thrives in conditions of poor sanitation and inadequate access to clean water, making it a common affliction in underdeveloped and developing countries (Olayinka et al., 2020). Although cholera is both easily preventable and treatable, it remains a persistent public health concern globally, largely due to structural inequities and insufficient health infrastructure in many parts of the world (Amaechi et al., 2024).

Globally, cholera remains endemic in approximately 47 countries, with outbreaks reported across Africa, Asia, and parts of the Americas. According to the World Health Organization, an estimated 1.3 to 4 million cholera cases occur each year, resulting in between 21,000 and 143,000 deaths (Kayembe, 2025). These figures underscore the significant burden of the disease, particularly in resource-limited settings. In 2022 alone, the WHO documented a sharp increase in cholera outbreaks worldwide, with more than 29 countries affected—a

troubling trend attributed to climate-related disasters, armed conflicts, and weakened public health systems (Obituyi et al., 2025). The African continent consistently bears the highest burden, accounting for over 80% of globally reported cases. Nigeria, in particular, continues to struggle with seasonal cholera outbreaks. In 2021, the Nigeria Centre for Disease Control (NCDC) recorded over 111,000 suspected cases and more than 3,600 associated deaths across 33 states, reflecting a case fatality rate above the WHO emergency threshold of 1% (Amaechi et al., 2024).

Cholera transmission primarily occurs through the fecal-oral route, with the consumption of water or food contaminated by the feces of an infected person being the most common pathway. Environmental conditions such as inadequate waste disposal, open defecation, poor drainage systems, and a lack of access to potable water contribute significantly to the spread of the disease—particularly in densely populated urban slums and remote rural areas (Getahun et al., 2024). In many Nigerian communities, access to clean water remains a luxury, forcing residents to rely on unprotected wells, streams, or harvested rainwater. Additionally, social practices such as communal eating, inadequate handwashing, and the consumption of unhygienic street food further increase the risk of exposure. During outbreaks, the disease can spread rapidly due to poor health literacy, delayed case reporting, and overstretched healthcare facilities (Olayinka et al., 2020).

The burden of cholera is not only epidemiological but also profoundly socio-economic. Families affected by the disease are often forced to bear out-of-pocket expenses for transportation to distant healthcare facilities, purchase oral rehydration salts, or resort to traditional remedies that may delay access to effective treatment. At the community level, cholera outbreaks disrupt local economies, reduce workforce productivity, and place additional strain on already fragile health systems (Getahun et al., 2024). In 2018, it was estimated that the economic cost of cholera in Africa exceeded $1 billion annually, factoring

in healthcare expenditures, lost income, and long-term social impacts (Kayembe, 2025). In Nigeria, the indirect costs of recurrent outbreaks are further exacerbated by low investment in public health infrastructure and inadequate emergency preparedness—particularly in rural and underserved regions (Amaechi et al., 2024).

While cholera can affect individuals of all ages, adults often experience milder or asymptomatic forms due to partial immunity acquired from previous exposure. However, in non-immune individuals—especially those newly arriving in endemic areas—the disease can progress rapidly and severely. Pregnant women, the elderly, individuals with chronic illnesses, and those with weakened immune systems are particularly susceptible to severe complications. Cholera is also notorious for triggering large-scale outbreaks in humanitarian settings, such as refugee camps or internally displaced persons (IDP) settlements, where overcrowding, poor sanitation, and limited access to healthcare create ideal conditions for transmission (Oscares et al., 2024). In Nigeria's northeast, where conflict and displacement are widespread, cholera outbreaks have repeatedly occurred, worsening an already complex public health crisis (Olayinka et al., 2020).

Despite the substantial threat cholera poses, it is both preventable and manageable. Early recognition of symptoms, prompt treatment with oral rehydration therapy, and the timely use of antibiotics in severe cases can significantly reduce mortality. Moreover, oral cholera vaccines (OCVs), such as Shanchol and Euvichol-Plus, have demonstrated effectiveness in protecting high-risk populations (Oscares et al., 2024). However, access to these vaccines in Nigeria remains limited due to logistical constraints, funding shortfalls, and low levels of public awareness. In 2022, for instance, global demand for cholera vaccines exceeded supply, causing delays in mass immunization efforts in several outbreak-prone countries, including Nigeria (Amaechi et al., 2024). Consequently, health education and behavior change communication have become increasingly vital as sustainable interventions to empower

communities with the knowledge and practices needed to prevent cholera transmission (Obituyi et al., 2025).

Understanding public knowledge and perception of cholera is critical to the success of prevention and control interventions. Adult patients attending general practice clinics—such as those at the University of Benin Teaching Hospital—represent a key demographic for such assessments. These individuals interact with the healthcare system regularly and often serve as opinion leaders within their families and communities. When well-informed, they can function as change agents by promoting hygienic practices, encouraging early health-seeking behavior, and supporting community surveillance for cholera cases. Conversely, inadequate knowledge or persistent misconceptions about the disease can lead to delayed diagnosis, non-adherence to preventive measures, and increased susceptibility to outbreaks (Getahun et al., 2024; Olayinka et al., 2020).

Exploring the depth of knowledge and prevailing perceptions among this group is therefore essential for designing effective, patient-centered health education strategies. Such efforts can improve disease prevention at both individual and community levels, ease the burden on tertiary healthcare facilities, and support national cholera control objectives. Additionally, these insights can guide policymakers and public health practitioners in identifying communication gaps and tailoring interventions that are culturally appropriate, locally relevant, and context-specific (Amaechi et al., 2024).

In conclusion, although cholera remains a significant global health concern—particularly in sub-Saharan Africa—its impact is disproportionately severe in countries like Nigeria, where environmental, infrastructural, and knowledge-based vulnerabilities persist. The combination of inadequate sanitation, limited access to clean water, and low health literacy creates a conducive environment for recurrent outbreaks (Blankson & Ashie-Nikoi, 2025). Gaining a

comprehensive understanding of adult patients' knowledge and perception of cholera is a vital step toward mitigating its spread and achieving sustainable public health outcomes. Clinics such as the General Practice Clinic at the University of Benin Teaching Hospital are well-positioned to contribute actively in this effort, not only as treatment centers but also as strategic platforms for health promotion and disease prevention.

2.1.2 Clinical Features and Complications of Cholera

Cholera is an acute diarrheal illness caused by the ingestion of food or water contaminated with Vibrio cholerae. While many infected individuals remain asymptomatic or experience only mild symptoms, others develop severe forms of the disease characterized by significant fluid loss and electrolyte imbalance (Blankson & Ashie-Nikoi, 2025). The incubation period is typically short, ranging from 12 hours to 5 days, with symptom onset often occurring suddenly. In endemic regions, cholera continues to be a major contributor to morbidity and mortality, particularly among vulnerable populations such as children, the elderly, and immunocompromised individuals (Amaechi et al., 2024).

The clinical manifestation of cholera is primarily driven by the rapid expulsion of fluids from the gastrointestinal tract. The cholera toxin binds to the epithelial cells lining the small intestine, triggering the secretion of chloride ions and water into the intestinal lumen. This pathophysiological process results in the hallmark symptom of profuse, watery diarrhea. If left untreated, the disease can progress rapidly, leading to severe dehydration, hypovolemic shock, circulatory collapse, and death within hours (Kapaya et al., 2025). According to the World Health Organization (2023), cholera is responsible for an estimated 21,000 to 143,000 deaths annually worldwide (Getahun et al., 2024). In Nigeria, the 2021 outbreak recorded over 111,000 suspected cases and more than 3,600 associated deaths, with the majority of patients presenting with advanced symptoms due to delayed healthcare access and limited public awareness (Amaechi et al., 2024).

Understanding the clinical features of cholera is essential for early detection, timely management, and improved patient outcomes. The key clinical features are outlined below:

1. Profuse Watery Stool

This is the most distinctive and dangerous symptom of cholera. The stool is typically colorless, odorless, and flecked with mucus, often described as “rice-water” in appearance. The diarrhea is usually painless but extremely voluminous, with some patients losing several liters within hours. The rapid fluid loss can overwhelm the body’s compensatory mechanisms, especially in children and malnourished individuals. In areas with poor healthcare access, rice-water stools are often misunderstood, leading to late presentation and worsening of the condition. Globally, it is estimated that more than 10% of cholera patients will progress to severe watery diarrhea without adequate fluid therapy (Kapaya et al., 2025).

2. Vomiting

Vomiting often accompanies the onset of diarrhea and contributes significantly to dehydration. It may be frequent and forceful, occurring regardless of food intake. The emesis is usually clear or contains bile, depending on the duration of illness. Vomiting exacerbates the loss of fluids and electrolytes, making rehydration more challenging, especially in pediatric cases. Studies in cholera-endemic regions such as Bangladesh and parts of Nigeria indicate that up to 80% of severely ill patients present with both vomiting and diarrhea, compounding the difficulty of fluid replacement therapy (Blankson & Ashie-Nikoi, 2025; Getahun et al., 2024).

3. Rapid Dehydration

As the disease progresses, the body loses not only water but also large amounts of essential electrolytes such as sodium, potassium, and bicarbonate. Clinical signs of dehydration include sunken eyes, dry tongue, poor skin turgor, cold extremities, and low urine output. In children, dehydration may manifest as irritability and a sunken fontanelle, while adults may

report dizziness and intense thirst. Severe dehydration can develop in less than 24 hours and is often misinterpreted as a different illness, leading to delayed care. WHO classifies dehydration into mild, moderate, and severe based on clinical signs and fluid loss, emphasizing early recognition as critical for survival (Kapaya et al., 2025).

4. Muscle Cramps

Painful cramps in the legs, arms, and abdomen are common in cholera patients and are usually due to electrolyte imbalances, particularly hypokalemia (low potassium levels). As potassium is rapidly lost in the stool, neuromuscular excitability increases, triggering spasms. These cramps can be debilitating and are sometimes mistaken for unrelated muscular issues in communities where awareness is low. Restoring electrolyte balance through appropriate rehydration solutions is key to resolving this symptom (Chisanga et al., 2024).

5. Lethargy and Altered Consciousness

In advanced stages of the illness, patients may exhibit confusion, apathy, or lethargy due to severe hypovolemia and poor cerebral perfusion. Children may become floppy or unresponsive, while adults may slip into a stupor or unconsciousness. These neurological signs are late indicators of circulatory compromise and require urgent intravenous rehydration. In many cholera treatment centers, particularly in northern Nigeria, such presentations are unfortunately common and closely associated with high fatality rates (Khalid et al., 2021).

Complications of Cholera

While cholera is treatable, delays in intervention often result in life-threatening complications. The speed at which complications arise is directly related to the volume of fluid loss and the availability of appropriate medical care. Most complications are preventable with early recognition and prompt fluid and electrolyte replacement. Unfortunately, in many low-income settings, the combination of poor infrastructure, inadequate public health education,

and lack of access to medical facilities results in delayed treatment and increased mortality. When left untreated or poorly managed, cholera can lead to multiple complications, primarily due to severe and sustained fluid and electrolyte losses (Amaechi et al., 2024). The major complications of cholera includes:

1. Hypovolemic Shock

This is the most immediate and fatal complication of cholera. It occurs when the body loses so much fluid that the heart can no longer pump sufficient blood to vital organs. Symptoms include rapid pulse, cold extremities, low blood pressure, and mental confusion. Without urgent intravenous fluid resuscitation, the condition can progress to multi-organ failure and death. During the 2010 Haiti cholera outbreak, thousands of deaths were attributed to hypovolemic shock due to overwhelmed health services and delayed intervention (Mugwanya et al., 2020). Similar outcomes were recorded in remote Nigerian communities during the 2021 outbreak (Amaechi et al., 2024).

2. Acute Kidney Injury (AKI)

Prolonged dehydration can lead to reduced renal perfusion and eventual kidney failure. Patients may produce little to no urine (oliguria or anuria), and waste products accumulate in the bloodstream. AKI complicates the management of cholera, as it requires close monitoring and, in severe cases, dialysis—an option that is often unavailable in under-resourced healthcare settings. Renal complications significantly increase the risk of mortality, especially among older adults (Kapaya et al., 2025).

3. Electrolyte Imbalance

Severe cholera disrupts the body's electrolyte balance, leading to conditions like hypokalemia, hyponatremia, and metabolic acidosis. Hypokalemia can cause cardiac arrhythmias, muscle paralysis, and respiratory distress. Hyponatremia may lead to seizures, confusion, or coma.

These imbalances are particularly dangerous in children and require precise correction through specially formulated rehydration solutions. In Nigeria, lack of access to laboratory testing often impedes accurate electrolyte assessment, increasing the likelihood of mismanagement (Amaechi et al., 2024).

4. Seizures and Neurological Symptoms

In children, particularly infants, rapid sodium loss can result in seizures. These may be generalized tonic-clonic seizures or subtle jerking movements that are easily overlooked. Neurological complications are often misattributed to febrile illnesses like malaria, delaying the correct diagnosis and management of cholera (Blankson & Ashie-Nikoi, 2025)

5. Miscarriage and Stillbirth

Cholera in pregnancy is associated with poor maternal and fetal outcomes. Severe dehydration and electrolyte imbalance can trigger uterine contractions, leading to premature labor or miscarriage. Stillbirths have also been reported during large outbreaks, especially in the third trimester. Pregnant women require aggressive hydration and monitoring, yet in many Nigerian hospitals, they arrive too late for optimal obstetric intervention (Chisanga et al., 2024).

2.1.3 Modes of Transmission of Cholera

Cholera transmission is primarily associated with the ingestion of food or water contaminated with the Vibrio cholerae bacterium. The disease spreads rapidly in environments with poor sanitation, limited access to safe drinking water, and inadequate hygiene practices. The fecal-oral route remains the dominant pathway, especially in regions with fragile healthcare systems and insufficient public health infrastructure. Contamination often occurs when human feces enter the water supply or when food is prepared or stored in unhygienic conditions. Once introduced into a vulnerable population, cholera can quickly escalate into an

outbreak, particularly in overcrowded settings such as refugee camps, slums, or rural communities lacking basic sanitary infrastructure (Bekhit et al., 2025).

Globally, the World Health Organization (2023) estimates that cholera affects 1.3 to 4 million people annually, leading to up to 143,000 deaths. These figures highlight the ease with which the bacterium is transmitted when environmental and human factors align. In Nigeria, the 2021 outbreak recorded over 111,000 suspected cases across 33 states, with common transmission linked to open defecation, unprotected wells, and poor waste management systems (Anetor, 2020). In the densely populated urban areas of Edo State, multiple cases have been traced to contaminated sachet water and food vendors who operate without routine health inspections. Thus, understanding the various modes of cholera transmission is essential for prevention and control efforts.

The main modes of transmission includes but are not limited to the following;

1. Contaminated Water

The most common vehicle for cholera transmission is water that has been contaminated with feces containing Vibrio cholerae. This contamination often occurs in communities that rely on surface water sources such as rivers, streams, and ponds for drinking, cooking, and bathing. In many low-income regions, these water bodies are also used for defecation and washing, creating a direct pathway for the bacterium to enter the human digestive system. Rainfall and flooding can exacerbate this risk by spreading sewage into water systems, as frequently seen in Nigeria's flood-prone zones during the rainy season (Olayinka et al., 2020). According to UNICEF (2022), over 60 million Nigerians lack access to basic drinking water services, making waterborne transmission a persistent threat. Even in urban areas like Benin City, burst pipes and illegal water connections frequently result in contamination of otherwise treated municipal water (Khalid et al., 2020).

2. Contaminated Food

Food becomes a vehicle for cholera transmission when it is handled with unwashed hands, prepared using contaminated water, or stored in unsanitary environments. Street food, which is widely consumed in many Nigerian urban centers due to affordability and convenience, often poses significant risk if vendors do not adhere to basic hygiene practices. Fruits and vegetables irrigated or washed with sewage-contaminated water, or seafood harvested from infected waters, can also harbor the bacteria (Saghir, 2025). The Centers for Disease Control and Prevention (CDC) has emphasized that seafood, especially shellfish, is a known carrier of Vibrio cholerae in coastal regions. In Nigeria, locally made foods like suya, moi-moi, and jollof rice, when prepared or served in unhygienic settings, have been implicated in previous cholera outbreaks. The absence of food safety regulations enforcement continues to make foodborne transmission a major challenge (Amaechi et al., 2024).

3. Person-to-Person Contact

Although cholera is not typically classified as a highly contagious disease from person to person like influenza or COVID-19, transmission can occur indirectly through contact with surfaces or materials contaminated by an infected person's feces or vomitus. This includes shared toilets, bed linens, eating utensils, and water storage containers. In overcrowded homes and healthcare settings, poor hand hygiene can turn communal living into a transmission hotspot. For instance, if a caregiver does not wash their hands thoroughly after cleaning up a sick person and then handles food or water, the infection can easily spread (Saghir, 2025). In rural Nigerian households where soap and water may be scarce, and cultural norms often place caregiving duties on family members, this mode of transmission becomes particularly significant (Khalid et al., 2020).

4. Poor Sanitation and Open Defecation

Cholera thrives in environments where human waste is not safely disposed of. Open defecation, which is still practiced by an estimated 25% of Nigerians (according to the 2021 WASH National Outcome Routine Mapping report), creates numerous contamination points. When feces are left in the open, rainfall can wash the pathogens into water sources, or they can be carried by flies and other vectors to food (Odeloui et al., 2025). Latrines without proper waste containment or maintenance may also leak into the ground, contaminating underground water sources. In flood-prone areas, poorly constructed sewage systems may overflow, contributing further to the cycle of contamination. Without major investments in public sanitation infrastructure and behavioral change interventions, cholera outbreaks will continue to occur cyclically in these communities (Olayinka et al., 2021).

5. Travel and Population Movement

The movement of infected individuals, especially during the early stages of illness when symptoms may not yet be severe, can introduce cholera into new communities. This is especially problematic in the context of migration, festivals, market days, or displacement due to conflict. In Nigeria, seasonal movement of people for farming, trade, or religious gatherings such as the Hajj or national crusades can facilitate the rapid spread of cholera from one region to another. Studies have shown that during the 2018 outbreak in Borno State, internal displacement and crowded IDP camps with poor water and sanitation facilities were major factors in sustaining the spread of the disease. Additionally, travelers who consume food or water from roadside vendors are at higher risk of acquiring and transmitting the infection unknowingly (Khalid et al., 2020).

2.1.4 Perception of Cholera

Community perception of cholera plays a pivotal role in determining how individuals respond to the disease and adopt preventive behaviors. Understanding cholera requires not only factual knowledge but also insight into how people perceive its severity, causes, and modes of transmission. In many regions of Nigeria, these perceptions are shaped by cultural beliefs, past experiences with the disease, and the degree of exposure to health education. For example, in communities with low levels of formal education, cholera is often interpreted through the lens of superstition or attributed to spiritual causes rather than being recognized as a preventable waterborne illness (Izah et al., 2024). As a result, individuals may resort to traditional remedies—such as herbal concoctions or religious rituals—instead of seeking timely and appropriate medical care. This reliance on non-medical interventions can lead to the neglect of essential preventive measures like proper sanitation, regular handwashing, and the use of safe water sources (Almoshanaf et al., 2022).

Beyond cultural misconceptions, some communities perceive cholera as a relatively minor health concern. This perception is often prevalent in areas that have not recently experienced outbreaks or where the consequences of the disease are not immediately visible. When cholera is viewed as a mild illness, individuals may delay seeking medical attention, thereby increasing the risk of severe dehydration, complications, and death. In contrast, communities that have suffered from severe or recurring cholera outbreaks tend to have a heightened awareness of its dangers and are more likely to adopt preventive practices such as boiling drinking water, maintaining personal hygiene, and reporting suspected cases promptly (Izah et al., 2024). Understanding these variations in perception is crucial for designing effective public health campaigns that can correct misconceptions, reinforce evidence-based practices, and foster long-term behavioral change.

Moreover, the perception of cholera often intersects with broader socio-economic realities. In rural and underserved areas with inadequate healthcare infrastructure, limited access to clean water, and poor sanitation, communities may lack both the knowledge and the means to protect themselves. In such settings, public perception is often shaped by daily survival needs and constrained resources, which can further hinder the adoption of preventive measures. Health education initiatives that address both informational gaps and cultural contexts are essential in fostering a more accurate and practical understanding of cholera. To be effective, health messaging must be culturally sensitive, locally tailored, and delivered in clear and accessible formats. This approach enables communities to respond more effectively to cholera outbreaks and contributes to the overall goal of reducing disease transmission (Almoshanaf et al., 2022).

1. Knowledge of Cholera

An individual's knowledge of cholera and its transmission is a critical component of their perception of the disease. In many cholera-endemic regions, individuals lack accurate knowledge about the nature of cholera, leading to poor preventive practices. A study in northern Nigeria revealed that more than 40% of the respondents associated cholera with supernatural causes, such as witchcraft, rather than understanding it as a waterborne illness (Khalid et al., 2020). This lack of knowledge about cholera's transmission mechanism may contribute to behaviors that facilitate its spread, such as the consumption of untreated water or the improper disposal of waste. When people do not understand that cholera spreads through contaminated food and water, they are less likely to adopt effective preventive measures, such as boiling water, practicing good hand hygiene, and using latrines (Abdoulaye et al., 2024).

The knowledge gap in rural communities can also be attributed to limited exposure to public health education campaigns. A study in Benin City found that only 25% of the respondents correctly identified cholera as a waterborne disease, despite the region experiencing periodic outbreaks (NCDC, 2021; Odeloui et al., 2025). This highlights the need for comprehensive health education programs that teach the general population about the routes of transmission, symptoms, and prevention strategies for cholera. Research has shown that increasing awareness about cholera and its prevention can significantly reduce the incidence of the disease. For example, when communities in parts of Africa were educated about cholera's transmission through water, the use of safe drinking water increased by over 50%, resulting in a marked reduction in cholera cases (WHO, 2020; Khalid et al., 2020).

In contrast, urban areas with better access to health services and education tend to exhibit higher levels of cholera awareness. For example, a study in Lagos State indicated that 80% of the respondents knew that cholera was primarily transmitted through contaminated water and food (Mugwanya et al., 2020). This knowledge translated into safer water consumption practices, including the use of filtered or boiled water. However, even in urban areas, gaps in knowledge persist, and some people still rely on traditional beliefs or outdated practices that contribute to cholera transmission. This highlights the importance of continuous, community-based education on cholera prevention to ensure that knowledge is maintained and translated into effective practices (Saghir, 2025).

2. Perception of the Severity of Cholera

The perceived severity of cholera significantly influences how individuals and communities respond to the disease. Cholera is often considered a severe and life-threatening illness due to its rapid onset and potential for fatality if not treated promptly. This perception is particularly evident in areas that have witnessed previous cholera outbreaks, where the disease is

associated with widespread morbidity and mortality. However, in communities that have not experienced a major cholera outbreak in recent years, the disease may be perceived as less serious, leading to delays in seeking medical care. Such communities may underestimate the importance of early treatment and fail to adhere to prevention strategies, such as using oral rehydration solutions (ORS) and seeking timely medical attention (Nauja et al., 2020).

A study in Ondo State found that over 30% of respondents underestimated the severity of cholera, believing it could be treated effectively with home remedies, such as herbal concoctions (Olayinka et al., 2020). This misperception of cholera as a mild illness can be deadly, as the disease can cause severe dehydration within hours, leading to shock and death if not treated with appropriate fluids and electrolytes. Conversely, communities that have experienced high mortality rates due to cholera outbreaks are more likely to view the disease as a serious threat and are quicker to adopt preventive measures. For instance, in regions where cholera has caused substantial loss of life, there is greater adherence to handwashing practices, the use of treated water, and proper sanitation to prevent the disease's spread (Khalid et al., 2020).

Furthermore, the perception of cholera's severity is often influenced by the availability of healthcare facilities and the quality of medical treatment in a given area. In locations where healthcare infrastructure is robust, there is typically greater confidence in seeking treatment early, which leads to better outcomes. In contrast, rural communities with limited access to medical care may rely more on local or traditional treatments, which could delay the use of oral rehydration solutions (ORS) or intravenous fluids—life-saving interventions for cholera patients. This discrepancy in perceptions based on healthcare access underlines the need for interventions that address both knowledge and the practical realities of healthcare delivery (Nauja et al., 2020).

3. Stigma and Cholera

In many cholera-endemic regions, stigma surrounding the disease can prevent individuals from seeking timely medical care. This stigma is often rooted in the perception that cholera is a disease of the poor, the unclean, or those who engage in risky behaviors. People infected with cholera may face social isolation or discrimination, particularly in communities where cleanliness is closely tied to moral values. In Nigeria, where cholera outbreaks are recurrent, patients who fall ill with the disease are sometimes blamed for their condition, leading to delays in seeking treatment and the spread of the disease to others (Amaechi et al., 2024).

A study conducted in Lagos State found that a significant number of cholera patients avoided seeking medical help for fear of being stigmatized (Mugwanya et al., 2020). In these cases, people often prefer to stay at home and rely on home remedies rather than visit a healthcare facility, which may be associated with shame or fear of being ostracized. This stigma can exacerbate the spread of cholera, as infected individuals may not report their condition or seek proper treatment, making it difficult to control outbreaks. Public health campaigns that focus on de-stigmatizing cholera and emphasizing that the disease is preventable and treatable are essential to overcoming these barriers and encouraging people to seek the medical care they need (Saghir, 2025).

The perception of cholera, shaped by cultural beliefs, past experiences, and knowledge levels, is a key factor in how individuals and communities respond to the disease. Misconceptions, especially regarding its causes and severity, can significantly undermine the success of public health interventions aimed at controlling cholera. A better understanding of these perceptions can guide health authorities in tailoring their education and prevention efforts to local realities, improving compliance with preventive measures and treatment protocols. In regions like Benin City, Nigeria, where cholera remains a recurring health challenge, addressing these

misconceptions and reducing stigma through community-based education programs is essential for minimizing the impact of future outbreaks (Odeloui et al., 2025)

2.1.5 Prevention and Control of Cholera

Preventing and controlling cholera involves a multi-faceted approach that includes both immediate responses during outbreaks and long-term strategies to reduce the risk of future occurrences. The key to effectively combating cholera is a combination of improving water, sanitation, and hygiene (WASH) infrastructure, as well as public health education. Prevention efforts require strong community participation and the establishment of sustainable health systems that can quickly detect and respond to outbreaks (Abdoulaye et al., 2024). In regions such as Nigeria, where cholera is a recurring public health challenge, these measures are especially vital. The effectiveness of cholera prevention is closely tied to the availability of safe drinking water, proper sanitation, and improved hygiene practices (Izah et al., 2024).

Globally, the World Health Organization (WHO) has provided guidelines for cholera prevention that focus on these core areas. The implementation of these strategies, however, requires substantial investment in infrastructure, governance, and education. According to a study by the WHO (2020), countries that invested in water treatment systems, sanitation facilities, and regular health education campaigns saw a significant reduction in cholera incidence (Izah et al., 2024). In Nigeria, the repeated outbreaks of cholera, particularly in underserved regions like Edo State, have underscored the urgent need for these interventions.

1. Safe Water Supply

Ensuring access to safe drinking water is the most effective method of cholera prevention. Contaminated water serves as the primary route for Vibrio cholerae transmission, and improving access to clean water is a cornerstone of cholera control efforts. In countries like Nigeria, where rural areas often lack piped water systems, community-based water treatment

solutions have proven effective in reducing cholera outbreaks (Davis et al., 2025). The provision of boreholes, well-maintenance programs, and water purification tablets are common interventions used to mitigate waterborne diseases. However, despite these efforts, many communities continue to rely on unsafe sources such as open wells, rivers, or sachet water, which are prone to contamination. In Edo State, for instance, reports from the Nigerian Center for Disease Control (NCDC, 2021) highlighted that unregulated water sources remain a significant challenge in controlling the spread of cholera (Odeloui et al., 2025).

In urban areas like Benin City, while municipal water supply exists, it is often inconsistent, leading to a reliance on less safe alternatives. Recent interventions by organizations like UNICEF, which focus on improving water filtration and promoting the use of chlorine tablets in households, have shown positive results in curbing cholera transmission. Increasing access to affordable, clean water in public and private spaces is crucial for reducing the incidence of the disease (Izah et al., 2024).

2. Sanitation and Waste Management

Proper sanitation and waste management are critical to preventing cholera, as the bacterium is often transmitted through fecal contamination of water sources. Building and maintaining adequate toilet facilities, particularly in high-risk areas like informal settlements, is essential to reduce the transmission of Vibrio cholerae (Ivanova et al., 2024). In Nigeria, where a significant portion of the population still practices open defecation, improving access to latrines and public toilets is a priority (Khalid et al., 2020). According to the WHO (2020), only about 28% of Nigerians have access to improved sanitation, meaning that the vast majority are exposed to the risk of fecal contamination (Olayinka et al., 2020).

The provision of sanitation infrastructure must go hand-in-hand with community education on the importance of using latrines and not defecating in open spaces. In Edo State, local

health authorities have initiated programs to build affordable, community-based sanitation systems. In addition, efforts to rehabilitate sewage systems in urban centers have been linked to a reduction in cholera cases. Public-private partnerships, such as those seen with water sanitation companies working in collaboration with the government, can also ensure that proper waste management is a continuous effort (Izah et al., 2024).

3. Handwashing and Hygiene Education

Hand hygiene is one of the simplest and most cost-effective interventions to prevent cholera transmission. Washing hands with soap and water after defecation, before preparing food, and before eating can significantly reduce the risk of cholera infection. In many cholera-endemic areas, however, handwashing practices are often neglected due to a lack of access to soap, clean water, or education on the importance of hygiene. In Nigeria, widespread campaigns to promote handwashing with soap have been integrated into cholera prevention strategies, especially during outbreaks (Izah et al., 2024).

Community health workers and local authorities have been instrumental in educating residents about proper hygiene practices. For example, during the 2021 cholera outbreak in Edo State, the NCDC launched public service announcements and hygiene sensitization campaigns in affected areas (Ubesie et al., 2024). Additionally, the provision of handwashing stations in public places, markets, and schools, combined with the distribution of hygiene kits containing soap and water purification tablets, can encourage better hygiene practices. Despite these efforts, barriers such as cultural resistance to change, limited resources, and inconsistent messaging remain challenges to widespread behavioral change (Saghir, 2025).

4. Cholera Vaccination

Oral cholera vaccines (OCVs) have become an important tool in cholera prevention, particularly in areas with recurring outbreaks and limited access to clean water and sanitation.

These vaccines provide temporary protection against cholera, significantly reducing the severity of infection and preventing the spread of the disease (Munemo et al., 2024). In Nigeria, OCV campaigns have been used to immunize high-risk populations during cholera outbreaks. According to the World Health Organization (WHO, 2020), vaccination campaigns targeting children, travelers, and residents of cholera-prone areas have proven effective in reducing the burden of the disease. However, the short-term protection provided by the vaccine means that vaccination efforts need to be part of a broader, long-term strategy that includes improving water, sanitation, and hygiene (Izah et al., 2024).

In Edo State, local authorities have collaborated with the Ministry of Health and international organizations to carry out vaccination drives in response to cholera outbreaks. While OCVs are an important part of cholera control, they should not be seen as a substitute for investments in water, sanitation, and hygiene infrastructure. The combination of vaccination and public health interventions has been shown to reduce cholera cases significantly (Odeloui et al., 2025).

5. Surveillance and Early Detection

Effective cholera control requires rapid detection and response to outbreaks. Surveillance systems that monitor trends in cholera cases and the detection of suspected cases play a crucial role in controlling the spread of the disease (Anetor, 2020). In Nigeria, the implementation of a national cholera surveillance system by the NCDC has enhanced the government's ability to track and respond to outbreaks in real-time. This system allows for the swift identification of cholera hotspots, enabling public health officials to deploy resources such as medical teams, vaccines, and water treatment supplies quickly (Izah et al., 2024).

Local hospitals, such as the University of Benin Teaching Hospital (UBTH), have contributed to early detection by training healthcare workers to recognize the clinical features of cholera and report cases to local health authorities. In Benin City, where urbanization and migration have contributed to the spread of cholera, surveillance systems are being improved to ensure that all suspected cases are reported and addressed promptly (Odeloui et al., 2025).

In summary, cholera prevention and control require a multifaceted approach that addresses the root causes of the disease—unsafe water, inadequate sanitation, and poor hygiene practices. Both short-term responses like vaccination and long-term solutions such as improving water and sanitation infrastructure must be integrated into public health strategies (Sema et al., 2024). In Nigeria, efforts to combat cholera must focus on improving access to safe water, building sanitation infrastructure, and promoting hygiene education at the community level. Only through sustained efforts in these areas can the incidence of cholera be effectively reduced, especially in high-risk regions like Edo State (Anetor & Abraham, 2020; Odeloui et al., 2025).

2.2 THEORETICAL FRAMEWORK

2.2.1 Health Belief Model (HBM)

The Health Belief Model (HBM) is one of the most widely used frameworks in understanding health behavior and guiding health education interventions. The model was developed in the 1950s by social psychologists Irwin Rosenstock, Godfrey Hochbaum, and others, in response to the need to understand why people fail to participate in disease prevention programs, particularly screening (Izah et al., 2024). HBM posits that individuals' health-related behaviors are determined by their perceptions of the severity and susceptibility to a health threat, the perceived benefits of taking preventive action, and the perceived barriers to that action. This model also incorporates cues to action and self-efficacy as important factors influencing health decisions.

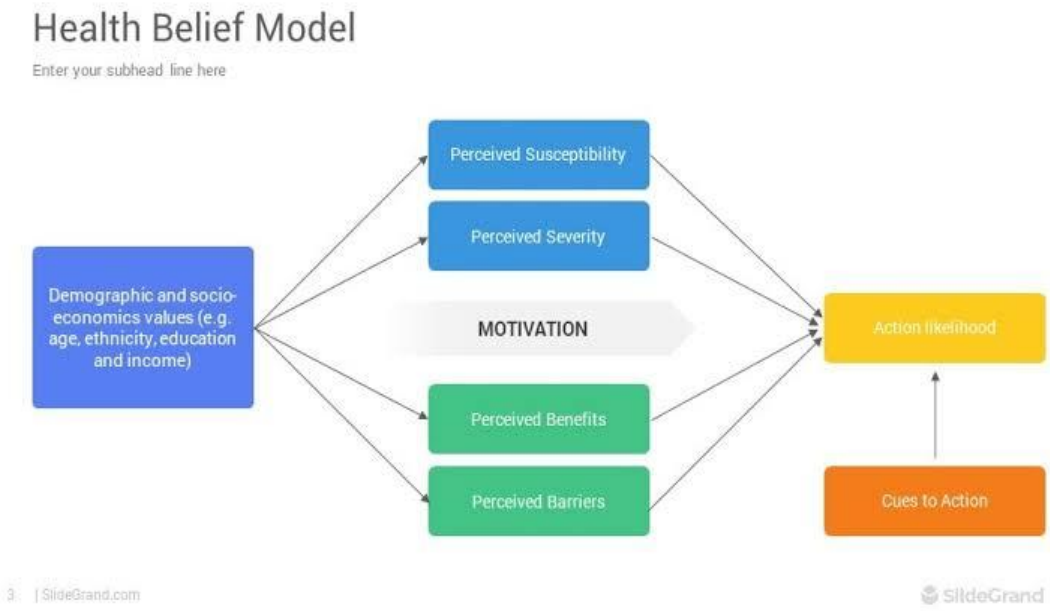

Fig 2.1 Schematic Illustration of the Health Belief Model (Mohebian et al., 2025)

In the context of cholera prevention, the Health Belief Model provides a useful framework for examining the knowledge, perceptions, and attitudes of individuals toward the disease and its prevention. The model suggests that individuals are more likely to engage in preventive behaviors (such as practicing good hygiene, using clean water, and seeking medical treatment for symptoms) if they perceive cholera as a serious and urgent health threat. This perception is influenced by the individual's awareness of cholera's severity, the potential for contracting the disease, and the perceived benefits of preventive actions.

2.2.2 Components of the Health Belief Model

1. Perceived Susceptibility:

Perceived susceptibility refers to an individual's belief about the likelihood of experiencing a health issue, such as cholera. In the context of cholera, individuals who perceive themselves or their community to be at high risk of contracting the disease are more likely to adopt preventive measures. This perception is often influenced by past experiences with the disease, media coverage of outbreaks, and general knowledge of cholera transmission. People living in cholera-endemic areas, for instance, are likely to feel more vulnerable to the disease, motivating them to engage in safer practices such as boiling water or using chlorine tablets. On the other hand, those who do not perceive themselves to be at risk may ignore preventive measures, even in the face of outbreaks.

2. Perceived Severity:

This component refers to an individual's belief about the seriousness of contracting a health condition and the potential consequences. In the case of cholera, individuals who view the disease as potentially life-threatening or capable of causing severe dehydration and death are more likely to take preventive actions. For example, the fear of cholera's rapid onset and high mortality rate, especially when untreated, may encourage people to take prompt measures such as seeking medical help when symptoms arise. Public health campaigns that highlight the severity of cholera can help increase awareness and motivate individuals to adopt preventive behaviors, such as improving sanitation and accessing safe drinking water.

3. Perceived Benefits:

This refers to an individual's belief in the effectiveness of the recommended health action to reduce the threat of illness. In the context of cholera, if people believe that specific preventive actions (such as using clean water, practicing hand hygiene, or getting vaccinated) will

effectively reduce their risk of contracting cholera, they are more likely to engage in these behaviors. Health education campaigns can emphasize the benefits of these preventive measures, helping individuals to recognize their importance. For instance, demonstrating the effectiveness of proper sanitation in reducing cholera outbreaks or the benefits of oral rehydration solutions (ORS) in treating dehydration could strengthen people's motivation to adopt these practices.

4. Perceived Barriers:

Perceived barriers refer to an individual's perception of the obstacles to taking recommended health actions. In the case of cholera prevention, barriers may include the perceived difficulty or cost of accessing clean water, lack of sanitation facilities, or the time required to boil water. For many people in resource-limited settings, these barriers can prevent the adoption of preventive practices. Health interventions must address these barriers by making preventive measures more accessible, affordable, and easy to implement. For example, providing free access to water purification tablets or improving water infrastructure can reduce the barriers to cholera prevention.

5. Cues to Action:

Cues to action are external triggers that prompt individuals to take action toward a health behavior. For cholera, cues may include media alerts about an outbreak, warnings from local health authorities, or personal experiences with cholera symptoms. Community-wide interventions, such as vaccination campaigns or cholera awareness days, can serve as cues to action, encouraging individuals to adopt preventive practices. The presence of these cues plays a critical role in motivating individuals to act, particularly when they are faced with an immediate health threat.

6. Self-Efficacy:

Self-efficacy refers to an individual's belief in their ability to successfully perform a behavior. In the case of cholera, individuals who feel confident in their ability to access clean water, maintain personal hygiene, and seek treatment for cholera symptoms are more likely to engage in these behaviors. Enhancing self-efficacy involves providing individuals with the tools, skills, and knowledge to take control of their health. For example, community training on how to properly purify water or recognize early symptoms of cholera can improve self-efficacy and lead to better health outcomes.

2.2.3 Application of HBM to Cholera Prevention

The Health Belief Model is particularly relevant in designing interventions for cholera prevention. Public health strategies based on HBM can address both the cognitive factors (perceived susceptibility, severity, benefits, and barriers) and the behavioral factors (cues to action and self-efficacy) that influence individuals' decisions to engage in preventive behaviors. For example, a public health campaign might aim to increase individuals' perceived susceptibility to cholera by providing data on local cholera outbreaks and highlighting the risks of contaminated water. At the same time, the campaign could emphasize the perceived severity of cholera by educating individuals about the potential consequences of untreated cases, such as death from dehydration.

Additionally, the campaign could highlight the perceived benefits of preventive actions, such as proper handwashing, the use of water filters, and seeking prompt medical care for symptoms. By framing these behaviors as effective and beneficial, the intervention can help individuals feel more confident in adopting them. Furthermore, addressing the perceived barriers, such as the availability and cost of clean water, can increase individuals' willingness to take preventive action. Finally, cues to action, such as community health announcements or health screenings, can serve as reminders for individuals to practice cholera prevention.

In regions where cholera is endemic, the Health Belief Model can be used to shape interventions that not only address immediate cholera outbreaks but also foster long-term behavior changes that improve water, sanitation, and hygiene practices. By focusing on the cognitive and emotional factors that influence individuals' health decisions, public health interventions can be more tailored to local contexts, improving their effectiveness in preventing cholera.

2.3 EMPIRICAL REVIEW

LEVEL OF KNOWLEDGE REGARDING CHOLERA AMONG ADULTS.

Bekhit et al. (2025) conducted a large-scale cross-sectional study across six MENA countries—Egypt, Sudan, Jordan, Syria, Lebanon, and Yemen—to assess KAP levels regarding cholera following recent outbreaks, involving 2,971 participants. While 50.7% of respondents had adequate knowledge, 67.3% demonstrated desirable attitudes, and 50.3% reported good practices. Comparatively, Ali et al. (2021), who assessed cholera-related KAP in Jazan City, Saudi Arabia using a similar online self-administered questionnaire, reported notably lower scores in knowledge (mean = 1.86 ± 0.990), attitude (6.14 ± 2.346), and practice (5.07 ± 1.353). Both studies identified higher education and working in the medical field as predictors of better knowledge and attitude, and both highlighted gender differences, with females showing better preventive practices. However, the broader geographic and sample diversity in Bekhit et al.'s study may account for the relatively higher overall scores, particularly as participants in countries recently affected by outbreaks likely had heightened exposure to health campaigns. In contrast, Ali et al.'s study took place in a more localized, non-outbreak setting, which may have contributed to lower awareness and urgency. Furthermore, while both employed digital data collection methods, Bekhit et al.'s much larger sample size and multicountry design enhanced generalizability and allowed deeper insight into contextual factors such as household density, which was found to negatively influence

practice levels—an aspect not captured in Ali et al.'s research. The contrast between both studies underscores how outbreak proximity, sample heterogeneity, and structural context influence public health knowledge and behavior regarding cholera.

Hamsho et al. (2024) conducted a descriptive cross-sectional study among 208 non-medical university students at the Syrian Private University to assess their knowledge and awareness of cholera. The findings revealed an average to weak level of knowledge, with only 51.4% correctly identifying bacteria as the causative agent and 54.3% recognizing acute watery diarrhea as a key symptom. While over 90% acknowledged contaminated water and food as transmission routes, the overall understanding and corresponding preventive attitudes were unsatisfactory. In contrast, Malaeb et al. (2022) assessed cholera-related KAP in Lebanon among 553 participants during the country's first outbreak in 30 years and found comparatively higher levels of awareness, especially among those with university education or employment in the medical field. While both studies employed self-administered questionnaires, the Lebanese study used multivariate analysis to establish significant predictors of knowledge and attitude, such as age, education, and marital status. The Syrian study, limited to a non-medical student population in a single institution, lacked such inferential analysis and broader generalizability. Additionally, Malaeb et al. identified gaps in knowledge even among healthcare workers, while Hamsho et al.'s study highlighted baseline weaknesses in cholera literacy among the general youth population. These differences suggest that public health knowledge is context-specific and shaped by education level, outbreak exposure, and sampling diversity. Together, the studies underscore the need for widespread, structured cholera education targeting both laypersons and health professionals across diverse settings.

Kayembe (2025) conducted a community-based cross-sectional study in the cholera-endemic Kalemie health zone of eastern Democratic Republic of the Congo, involving 455

participants selected through a three-stage random sampling. The study revealed moderate knowledge and positive attitudes towards cholera, but highlighted significant gaps in awareness of transmission routes and preventive measures, compounded by limited access to water treatment and sanitation. In contrast, Jamaleddine et al. (2023) assessed cholera knowledge, attitudes, and practices among 691 Lebanese residents using a self-administered questionnaire after a cholera outbreak. The Lebanese population demonstrated higher levels of cholera knowledge and positive attitudes, with strong correlations to education level, age, and gender. While both studies used cross-sectional designs, Kayembe's study focused on a rural, low-resource setting with structural barriers impacting WASH (Water, Sanitation, and Hygiene) practices, whereas Jamaleddine et al. examined an urban population with more access to preventive resources, including vaccine attitudes. The DRC study employed multivariable analysis to identify demographic and socio-economic predictors of poor knowledge and hygiene, while the Lebanese study incorporated vaccine willingness, broadening the scope of cholera prevention. Both studies rely on self-reported data, which may introduce bias, but the differences in population, setting, and methodological depth highlight how cholera knowledge and practices are influenced by context. Together, these findings emphasize the need for tailored public health interventions that address not only individual knowledge gaps but also systemic environmental challenges in cholera-endemic regions.

PERCEPTION OF ADULTS REGARDING CHOLERA

Liaqat et al. (2024) conducted a cross-sectional study among 800 mothers of children aged 1–5 years across five major cities in Pakistan to assess their awareness of cholera identification and transmission. The study revealed that less than half of the mothers had adequate knowledge, with significant associations found between mothers' education level and their understanding of cholera transmission. In contrast, Getahun et al. (2024) surveyed 870

households in urban and rural high-priority cholera hotspots in Shashemene, Ethiopia, to explore healthcare-seeking behavior and community perceptions of cholera and acute diarrhea. This study highlighted disparities in access to healthcare facilities and differences in care-seeking behavior between urban and rural populations, with a relatively high awareness level (73.8%) regarding cholera transmission primarily linked to unclean food consumption. Both studies employed cross-sectional designs with random sampling, but while Liaqat et al. focused on mothers' knowledge in health facility settings, Getahun et al. examined broader community behavior and perceptions in diverse geographical contexts. Liaqat et al.'s findings point to significant knowledge gaps among a vulnerable group critical to cholera prevention, whereas Getahun et al. emphasized structural barriers and the need for tailored community engagement strategies. Together, these studies underscore the importance of context-specific health education and infrastructure improvements to enhance cholera prevention and control efforts in diverse settings.

Hamsho et al. (2024) conducted a descriptive cross-sectional study among 208 non-medical university students at the Syrian Private University to assess their knowledge and awareness of cholera. The study revealed an average to weak level of knowledge, with just over half of participants identifying bacteria as the causative agent and recognizing key symptoms such as acute watery diarrhea. Despite high awareness of transmission routes like contaminated water and food, the overall understanding and preventive attitudes were insufficient. In comparison, Merten et al. (2023) examined community perceptions and oral cholera vaccine (OCV) acceptability among 360 adults in rural and remote areas of Katanga Province, Democratic Republic of Congo. While a majority recognized contaminated water and food as cholera causes, only a minority identified vaccines as a preventive measure. However, anticipated acceptance of free OCVs was very high, though it dropped significantly when costs were introduced, especially among marginalized groups. Both studies utilized cross-sectional

designs with random sampling but focused on distinct populations—university students in a controlled academic setting versus rural communities with socio-cultural complexities. Hamsho et al. highlighted knowledge gaps in a relatively educated youth cohort, while Merten et al. emphasized the importance of affordability and cultural factors in vaccine uptake. Together, these findings suggest that improving cholera prevention requires not only addressing knowledge deficits but also considering economic barriers and social dynamics in vaccination campaigns.

EXTENT OF AWARENESS AND ADOPTION OF PREVENTIVE MEASURES

Raimi et al. (2020) conducted a stratified cross-sectional study among 224 healthcare workers in public and private health facilities in Kubwa District, Abuja, to evaluate knowledge, attitudes, and practices (KAP) related to hand washing. While the majority demonstrated good knowledge (68.3%) and positive attitudes toward hand hygiene, only about half practiced excellent hand washing, with barriers such as lack of essential materials impeding compliance. In contrast, Khudair (2024) assessed hand hygiene awareness among 171 healthcare providers in hospitals across Al-Nasiriyah city, finding that experience and higher education levels were significantly associated with better awareness scores. Khudair's study also emphasized the need for continuous training and improved access to hygiene supplies, such as alcohol-based sanitizers, to sustain infection control. Both studies used cross-sectional designs and self-reported data, but Raimi et al. supplemented this with observational checklists, allowing better insight into actual practice gaps. Together, these studies reveal that despite good knowledge and positive attitudes among healthcare workers, practical adherence to hand hygiene remains inconsistent, highlighting the critical role of resource availability and ongoing education to bridge this gap.

The studies by Moses et al. (2025) and Onwunta et al. (2025) collectively highlight critical gaps in cholera outbreak preparedness, awareness, adoption of preventive measures, and the recurring nature of cholera in Nigeria, underscoring the need for holistic and sustainable interventions. Moses et al., in their systematic literature review of 32 studies, emphasize the influence of demographic and behavioral determinants—such as education level, economic status, and political marginalization—on household preparedness, revealing that the most vulnerable populations often lack the knowledge, resources, or willingness to plan for cholera outbreaks. In contrast, Onwunta et al., based on a comprehensive review of published literature, focus on systemic and environmental drivers, identifying infrastructural deficiencies, weak health systems, and poor vaccination uptake as the main contributors to recurrent cholera outbreaks. The correlation between both studies lies in their shared conclusion that cholera preparedness and prevention efforts must be multidimensional—addressing individual-level awareness and behaviors as well as systemic, environmental, and policy-level barriers. Together, they call for integrated strategies and the adoption by combining health education, WASH infrastructure, surveillance, and equitable resource distribution to effectively mitigate future outbreaks.

Musawi (2025) conducted a cross-sectional study assessing knowledge and preventive behaviors regarding cholera among 150 school students aged 13–15 in Latakia, Syria. The study found that most participants demonstrated adequate knowledge (66.75%) and good preventive behaviors (78.91%), highlighting the importance of education in outbreak control. Differences between male and female knowledge levels were also noted, suggesting potential gender-specific educational needs. In contrast, Chakanyuka et al. (2025) employed a mixed-methods approach to evaluate government-led interventions aimed at preventing cholera resurgence in Misisi Compound, an unplanned settlement in Lusaka, Zambia. Their findings underscored the effectiveness of infrastructural improvements—such as boreholes, public

toilets, and vaccination campaigns—in reducing cholera incidence by 40%, alongside hygiene education and community engagement fostering sustainable preventive practices. However, they also identified persistent challenges including rapid urbanization and resource mismanagement that impede intervention success. While Musawi's study focuses on individual-level knowledge and behaviors among schoolchildren in a controlled educational setting, Chakanyuka et al. address systemic, community-level strategies and infrastructural interventions in a high-risk urban environment. Together, these studies illustrate the multifaceted nature of cholera prevention, emphasizing the need for integrated approaches that combine health education with infrastructural development and community participation.

FACTORS INFLUENCING KNOWLEDGE AND PERCEPTION OF CHOLERA

Di Gennaro et al. (2022) and Akel et al. (2023) both explored factors influencing knowledge, attitudes, and practices (KAP) regarding cholera, highlighting the role of socio-demographic and contextual variables in shaping public health behavior. Di Gennaro's study, conducted among internally displaced persons (IDPs) in Mozambique, revealed that being female, younger than 35, more educated, owning a mobile phone, and having access to soap were significant predictors of better cholera-related KAP. Similarly, Akel et al., studying the general Lebanese population during a 2022 outbreak, found that female gender, vaccine awareness, and openness to health education positively influenced knowledge and practices, while reliance on social media and smoking were associated with poorer outcomes. Although both studies emphasized the link between higher knowledge and improved practices, Di Gennaro's participants benefited from basic resources like hygiene supplies and communication tools, whereas Akel's population was more digitally connected but vulnerable to misinformation. The contrast in settings—displacement camps versus urban communities—highlights how resource availability, information sources, and population

vulnerability distinctly shape cholera prevention efforts, underscoring the need for tailored, context-specific public health strategies.

Adewuyi et al. (2022) and Aborode et al. (2025) both examine cholera outbreaks in Nigeria and factors affecting its perception but from different lenses—clinical containment versus systemic prevention. Adewuyi et al. present a case report of a single cholera patient in Edo State and highlight the effectiveness of rapid diagnosis, interdepartmental collaboration, and strict infection control in preventing the spread of disease, emphasizing a facility-level, reactive response to a potential epidemic. In contrast, Aborode et al. adopt a broader, proactive approach using the One Health framework, which integrates human, animal, and environmental health to address the systemic causes of cholera, such as poor sanitation, inadequate water supply, and climate change. While Adewuyi et al. demonstrate successful containment at a micro level, Aborode et al. call for cross-sectoral collaboration and sustainable environmental health interventions at the national level. Together, these studies underscore that cholera control requires both immediate clinical management of individual cases and long-term structural solutions that address environmental and societal determinants of health.

2.4 SUMMARY OF LITERATURE REVIEW

This literature review synthesizes empirical findings from recent studies on the knowledge and perception of cholera and its prevention, particularly among adults in healthcare and community settings. A number of cross-sectional and observational studies across sub-Saharan Africa—including Nigeria—reveal varying levels of cholera-related knowledge, with most respondents demonstrating only moderate understanding of the disease's transmission, symptoms, and preventive strategies. While some studies highlight good awareness among certain professional or educated populations, significant misconceptions persist, particularly in rural and underserved areas. These misconceptions often relate to the causes and nature of

cholera, including beliefs in supernatural origins or seasonal inevitability, which hinder proper prevention and timely health-seeking behavior.

Empirical evidence further points to social determinants such as educational level, income, and access to clean water as strong influencers of knowledge and perception. However, while these studies offer valuable insights, many suffer from methodological limitations—such as small or non-representative sample sizes, lack of standardization in assessment tools, and limited geographic focus—which reduce the generalizability of their findings. Additionally, few studies directly target adult patients in tertiary healthcare settings, a gap that this current study seeks to fill. By focusing on adult patients attending the General Practice Clinic at the University of Benin Teaching Hospital, the present research addresses a critical population often overlooked in prior research. This focus will not only provide context-specific data but also inform targeted and effective public health interventions based on the identified knowledge gaps and misperceptions.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter is discussed under the following subheadings: research design, research setting, target population, sample size, sampling technique, instrument for data collection, validity of instruments, reliability of instruments, method of data collection, method of data analysis and ethical consideration.

3.1 Research Design

A descriptive cross-sectional study design was employed to assess the knowledge and perception of cholera and its prevention among adult patients attending the General Practice Clinic at the University of Benin Teaching Hospital, Benin City, Edo State. A descriptive cross-sectional study is a type of research that involves the analysis of data collected at a single point in time. This design allows for efficient data collection, facilitates comparisons across different patient groups, provides immediate insights, and serves as an initial exploration of potential associations (Wang & Cheng, 2020).

3.2 Research setting

This study was carried out among adult patients attending the General Practice Clinic (GPC) at the University of Benin Teaching Hospital (UBTH), Benin City, Edo State. The University of Benin Teaching Hospital, established on May 12, 1973, under the Nigeria National Health Act, is one of Nigeria's first-generation teaching hospitals and serves as a prominent tertiary

healthcare facility. It was founded to complement the University of Benin by providing both secondary and tertiary medical care services. The hospital is located along the Benin-Lagos Expressway in Egor Local Government Area of Edo State and comprises various clinical departments and specialized units, including the infant welfare clinic, in vitro fertilization unit, nursing services, pharmaceutical services, radiology, and the intensive care unit, among others.

The General Practice Clinic (GPC) is a key outpatient unit within UBTH that provides accessible, non-specialist primary care services to a wide range of patients. It serves as the first point of contact for most adult patients seeking healthcare at the hospital. The clinic operates daily and is staffed by general physicians, nurses, pharmacists, and administrative personnel who manage common illnesses, provide referrals to specialist units when necessary, and offer preventive health education. Due to its high patient volume and diversity, the GPC provides a suitable environment for assessing public health issues, including knowledge and perception of communicable diseases such as cholera..

3.3 Target Population

The target population is the group of individuals that the intervention intends to conduct research in and draw conclusions from. (Adam, 2020). The target population for this study are adult patients attending the General Practice Clinic at the University of Benin Teaching Hospital, Edo State. The total number 7050 of adult patients both new and old attended the general practice clinic in the University of Benin Teaching Hospital from the month of January 2025 to February, 2025.

Daily Attendance of Adult Patients at UBTH General Practice Clinic (January 2025 to February)

Week	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	173	182	195	168	157

Week	Monday	Tuesday	Wednesday	Thursday	Friday
Week 2	188	177	192	181	160
Week 3	199	170	189	178	165
Week 4	174	183	198	169	159
Week 5	186	175	193	162	155
Week 6	172	179	196	167	158
Week 7	185	176	191	170	153
Week 8	171	180	197	166	161

The average number of Adult Patients from January 2025 to February 2025 is 881(General Practice Clinic of UBTH, 2025).

3.4 Sampling (Size and Formula)

Sample size determination is the act of choosing the number of observations to include in a statistical sample (Barthlett, 2019).

The sample size was determined using Taro Yamane's formula (1967) for finite population.

Formula;

n =N/[1+n(e)2]

n=

Where;

n= required sample

N= population under study

e= margin error which is 0.05 at 95% confidence level

1= constant

$$n = \frac{881}{1 + 881(0.05)^2}$$

$$n = \frac{881}{1 + (0.0025)}$$

$$n = \frac{881}{1+2.2025}$$

$$n = \frac{881}{(3.2025)}$$

$$n = 275$$

Therefor, the sample is 275

Inclusion criteria

1. Adult patients (18 years and above) attending the General Practice Clinic at the University of Benin Teaching Hospital (UBTH).

2. Patients who are willing to provide informed consent to participate in the study.

3. Patients who have had at least one visit to the General Practice Clinic during the past six months.

4. Patients who are able to understand and communicate in English or local languages (for the purposes of the survey or interview).

Exclusion Criteria

1. Minors (under 18 years old) attending the clinic.

2. Patients who are unwilling to provide consent to participate in the study.

3. Patients who are severely ill or unable to comprehend the study materials due to acute health conditions or cognitive impairment.

3.5 Sampling Technique

The sampling technique that was used for the study is convenience sampling technique, which is a method of selecting participants for a research study based on their easy accessibility and convenience to the researcher. Convenience sampling was chosen due to its practicality and ease of implementation. Given the constraints of time, resources, and accessibility to the target population, convenience sampling allowed for the selection of participants who were readily available and accessible to the researcher within the study setting (Mweshi & Sakyi, 2020).

3.6 Instrument for data collection:

A self-structured questionnaire was utilized as the instrument for data collection (APPENDIX 1). The questionnaire contains closed-ended questions that were carefully drafted, sequenced, and constructed to gather in-depth information from nurses. The questionnaire comprises of sections.

Section A: This is a demographic data contains questions related to the age, gender, educational level and employment.

Section B: Assess the level of knowledge of adult patients at the General Practice Clinic (6 Items)

Section C: Determine the perception of adult patients regarding cholera attending General Practice Clinic (6 Items)

Section D: Examine the extent of awareness and adoption of preventive measures such as hand hygiene, safe water consumption, and vaccination among adult patients attending General Practice Clinic (6 Items)

Section E: Identify factors influencing knowledge and perception of adult patients regarding cholera attending General Practice Clinic (6 Items)

3.7 Validity of instruments

Validity refers to the degree to which a research instrument measures what it is intended to measure (Yusoff, 2021). The instrument was validated through face and content validity. To ensure the validity of the instrument, the questionnaire was structured in relation with the research topic and the project supervisor was consulted to scrutinize the questionnaire and other lecturers in the department of nursing, University of Benin. Due corrections were made before distribution. The questionnaire measures what it is supposed to measure and this was ensured by face and content validity.

3.8 Reliability

Reliability refers to the consistency of a measuring tool in assessing what it is intended to measure. According to Patrick et al. (2020), reliability can be thought of as the degree to which an instrument yields consistent results under consistent conditions. To ensure the reliability of this study's instrument, a pilot test was conducted (APPENDIX II). The corrected version of the questionnaire was administered to a small sample of participants who possess similar characteristics to the main study population but were not included in the actual study.

The reliability coefficient was calculated using Cronbach's alpha (α) to measure the internal consistency of the questionnaire. Cronbach's alpha values range from 0 to 1, with values

closer to 1 indicating higher reliability. For this study, a Cronbach's alpha score of 0.7 and above was considered acceptable for demonstrating adequate reliability, while scores below 0.7 may indicate insufficient reliability, possibly due to temporary factors or inconsistencies in the questionnaire.

According to Heale and Twycross (2018), the importance of assessing reliability in research includes the following:

Consistency of Measurements: Reliability ensures that the instrument consistently measures the intended constructs across different conditions and time points, providing meaningful and accurate results.

Validity Support: A reliable instrument serves as a foundation for establishing validity. If the instrument consistently measures what it is intended to, it supports the validity of the results.

Comparability: High reliability allows for meaningful comparisons across studies, time points, or different research settings, as it indicates that the instrument produces consistent results.

Reduced Measurement Error: High reliability reduces measurement errors, enhancing the trustworthiness of the research findings.

3.9 Method of data collection

Data was collected using a self-structured questionnaire (APPENDIX I) distributed to patients attending the General Practice Clinic at the University of Benin Teaching Hospital, Benin City, Edo State. To ensure a comprehensive data collection process, participants were approached at times that coincided with their availability at the clinic. The questionnaires were handed directly to the patients, who were encouraged to complete them on the spot to enhance the response rate.

The data collection period spanned over two weeks, allowing sufficient time for follow-up with participants who are unable to complete the questionnaire during the initial distribution. A research assistant was engaged to support the distribution and retrieval of questionnaires, ensuring efficient coordination. Upon completion, the collected data was sorted, organized, and prepared for analysis.

3.10 Method of data analysis

Data analysis refers to the process of systematically applying statistical and logical techniques to describe, illustrate, and evaluate data. This process helps in identifying patterns, testing hypotheses, and drawing meaningful conclusions (Sarfo et al., 2021). During the analysis phase, data cleaning procedures were employed to ensure the accuracy and integrity of the dataset, including the identification and correction of errors, inconsistencies, and missing values that may have occurred during data collection.

Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data. For items measured on a Likert scale, a mean score of 2.5 was used as the cut-off point for determining adequate knowledge or positive perception. A mean score equal to or above 2.5 was interpreted as a positive response, while a score below 2.5 was considered negative. Additionally, the hypotheses were tested using the Chi-Square test to determine the degree of association between variables and to identify any significant differences at a 0.05 level of significance. The data analysis was conducted using the Statistical Package for the Social Sciences (SPSS), version 26.0.

3.11 Ethical Consideration

Ethical considerations in research refer to the principles and guidelines that protect participants' rights, welfare, and dignity throughout the research process (Sobočan et al.,

2020). These principles are essential for maintaining the integrity, trust, and moral responsibility within the research community (Brittain et al., 2020). For this study, approval was obtained from the Health Research Ethics Committee of the University of Benin Teaching Hospital, Benin City, Edo State, prior to data collection (Appendix III).

The ethical measures adopted in this study include:

Voluntary Participation: Participation in the research was entirely voluntary, and respondents had the right to withdraw from the study at any stage without any penalty.

Privacy and Confidentiality: Participants' privacy were strictly protected, as no personally identifiable information were collected. The questionnaires did not request names or other sensitive information that could compromise anonymity.

Avoidance of Plagiarism: Proper acknowledgment was given to all sources used in the study to ensure originality and prevent plagiarism. Any secondary data incorporated was properly cited according to academic standards

Maintenance of Confidentiality: The respondents' names were withheld, and information given was not divulged to others but rather was treated with utmost secrecy, strictly for academic purposes.

These measures ensured that participants' rights were safeguarded and that the research adhered to ethical standards.

CHAPTER FOUR

RESULTS PRESENTATION

A total of 275 questionnaires were administered, it was all filled appropriately by the respondents and was recovered by the researcher. This gives a 100% return rate.

4.1 Socio-Demographic Characteristics Of The Respondents

Table 4.1 Socio-Demographic Data Of Respondents

Variables		Frequency	Percentage %
Age	< 20 years	28	10.2
	20 – 29years	58	21.1
	30-39 years	111	40.4
	40 –49 years	58	21.1
	50 years and above	20	7.3
Gender	Male	101	36.9
	Female	174	63.1
Religion	Christianity	238	86.5
	Islam	30	10.9
	Traditional	7	2.5

Ethnicity	Benin	159	57.8
	Esan	40	14.5
	Urhobo	30	10.8
	Igbo	23	8.4
	Yoruba	13	4.8
	Etsako	10	3.6
	Itshekiri	3	1.2
Marital status	Single	79	28.9
	Married	166	60.2
	Divorced	10	3.6
	Widowed	20	7.2
Educational	Primary	52	18.9
Qualifications	Secondary	100	36.4
	Tertiary	65	23.6
	No Formal Education	58	21.1
Occupation	Student	28	10.2
	Self Employed	67	24.4
	Employed	99	36
	Unemployed	51	18.5
	Retired	30	10.9

Table 4.1 shows that most respondents were aged 30–39 years (40.4%) and predominantly female (63.1%). A majority had at least secondary education (36.4%), and most were either employed (36%) or self-employed (24.4%).

4.2 Level of Knowledge of Adult Patients about Cholera in GPC

Table 4.2 Level of Knowledge of Adult Patients about Cholera in GPC

ITEMS	RESPONSE	FREQUENCY	PERCENTAGE
I have heard of cholera before	Yes	274	99.6
	No	1	0.4
Cholera is caused by drinking contaminated water or eating contaminated food	Yes	205	74.5
	No	70	25.5
Diarrhea and vomiting are common symptoms of cholera	Yes	220	80
	No	55	20

Cholera can be prevented by practicing good hygiene, such as washing hands regularly	Yes No	190 85	69 31
Cholera can lead to severe dehydration	Yes No	216 59	78.7 21.3
Cholera can be fatal if not treated promptly	Yes No	190 85	69 31

Table 4.2 shows that almost all respondents (99.6%) had heard of cholera, indicating high awareness. However, some gaps still exist, as only 74.5% correctly identified contaminated food or water as the cause, and 69% recognized good hygiene as a preventive measure. While 80% knew the main symptoms, and 78.7% understood that cholera can cause severe dehydration, awareness of its fatal potential (69%) remains suboptimal.

Table 4.3 Level Of Knowledge Of Adult Patients In GPC Regarding Cholera

Level	Percentage	Frequency
High	85.6	235
Low	14.4	40

Table 4.3 shows that most respondents (85.6%) had a high level of knowledge about cholera, while 14.4% had low knowledge. This indicates generally good awareness but highlights the need for continued health education to close remaining knowledge gaps.

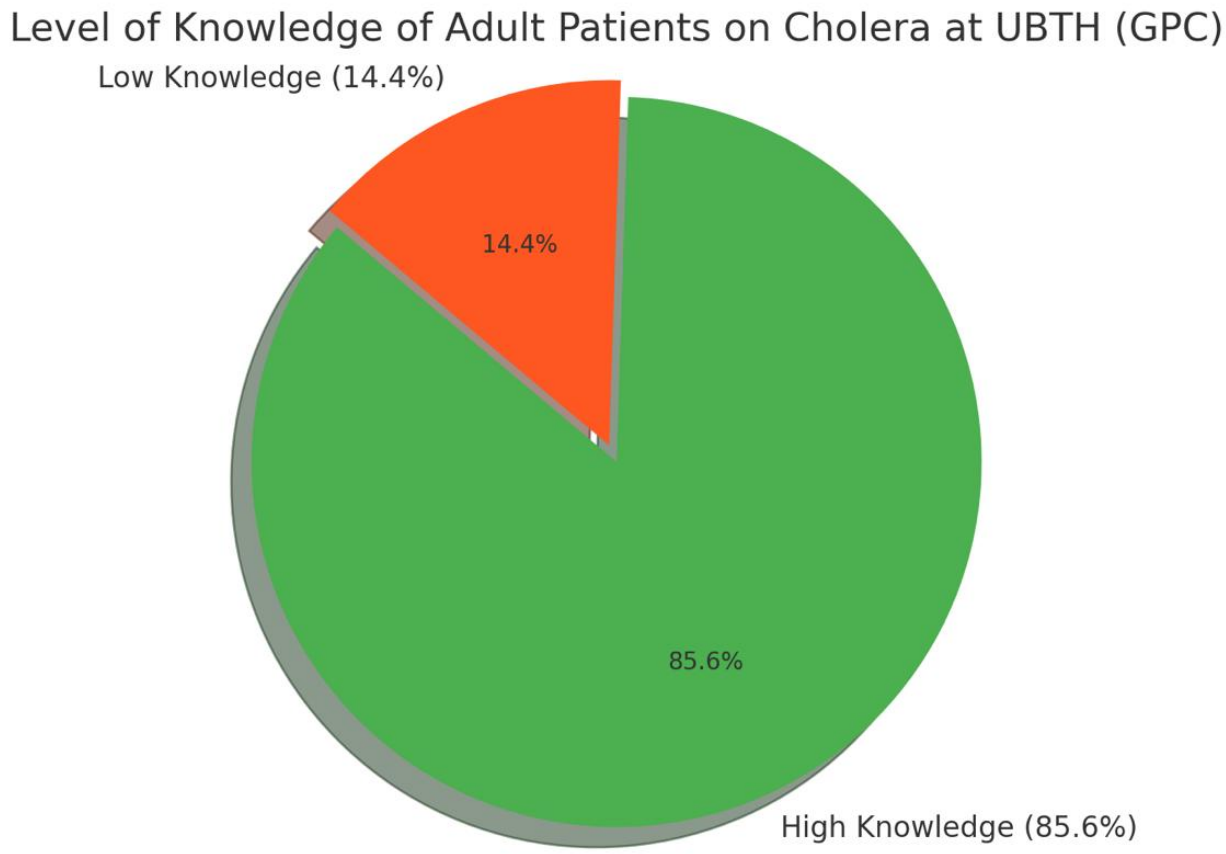

Fig 4.1 Piechart on the level of knowledge of adult patients on cholera at UBT

The pie chart shows that most respondents (85.6%) had a high level of knowledge about cholera, while 14.4% had low knowledge. This indicates generally good awareness among patients at the clinic..

4.3 The Perception Of Adult Patients In GPC Regarding Cholera.

Table 4.4 The Perception of Adult Patients in GPC Regarding Cholera

Items	Strongly Agree	Agree	Disagree	Strongly Disagree
Cholera is a serious health threat in my community.	123 (44.9%)	136 (49.5%)	14 (5%)	2 (0.6%)
Cholera outbreaks are caused by poor sanitation and hygiene practices.	55 (20%)	210 (76.4%)	8 (3%)	2 (0.6%)
Practising good hand handwashing and hygiene practices can help prevent cholera.	33 (12.3%)	91 (33.2%)	38 (13.9%)	112 (40.6%)
Access to clean drinking water can prevent the spread of cholera.	90 (32.7%)	155 (56.4%)	28 (10.2%)	2 (0.6%)
People who contract cholera can fully recover with proper treatment.	115 (41.8%)	103 (37.3%)	28 (10.2%)	29 (10.9%)
Cholera only affects certain age groups or populations.	136 (49.5%)	123 (44.9%)	14 (5%)	2 (0.6%)

Table 4.4 shows that most respondents recognized cholera as a serious health threat and linked its outbreak to poor sanitation. Many also agreed that clean water can prevent cholera, though fewer understood the role of hand hygiene. While most believed recovery is possible with treatment, some misconceptions remained about age-related susceptibility.

Table 4.5 Level Of Perception Of Adult Patients Regarding Cholera

Level	Percentage	Frequency	Level
Good	75.6	208	Good
Moderate	14.4	40	Moderate
Poor	10	27	Poor

The table presents the level of perception of adult patients regarding cholera at the General Practice Clinic (GPC), University of Benin Teaching Hospital. It shows that a significant majority (75.6%) of patients, totalling 208 individuals, have a good perception of cholera. Meanwhile, 14.4% (40 individuals) have a moderate perception, and only 10% (27 individuals) exhibit a poor perception. This indicates a generally high level of awareness or understanding of cholera among the adult patients surveyed.

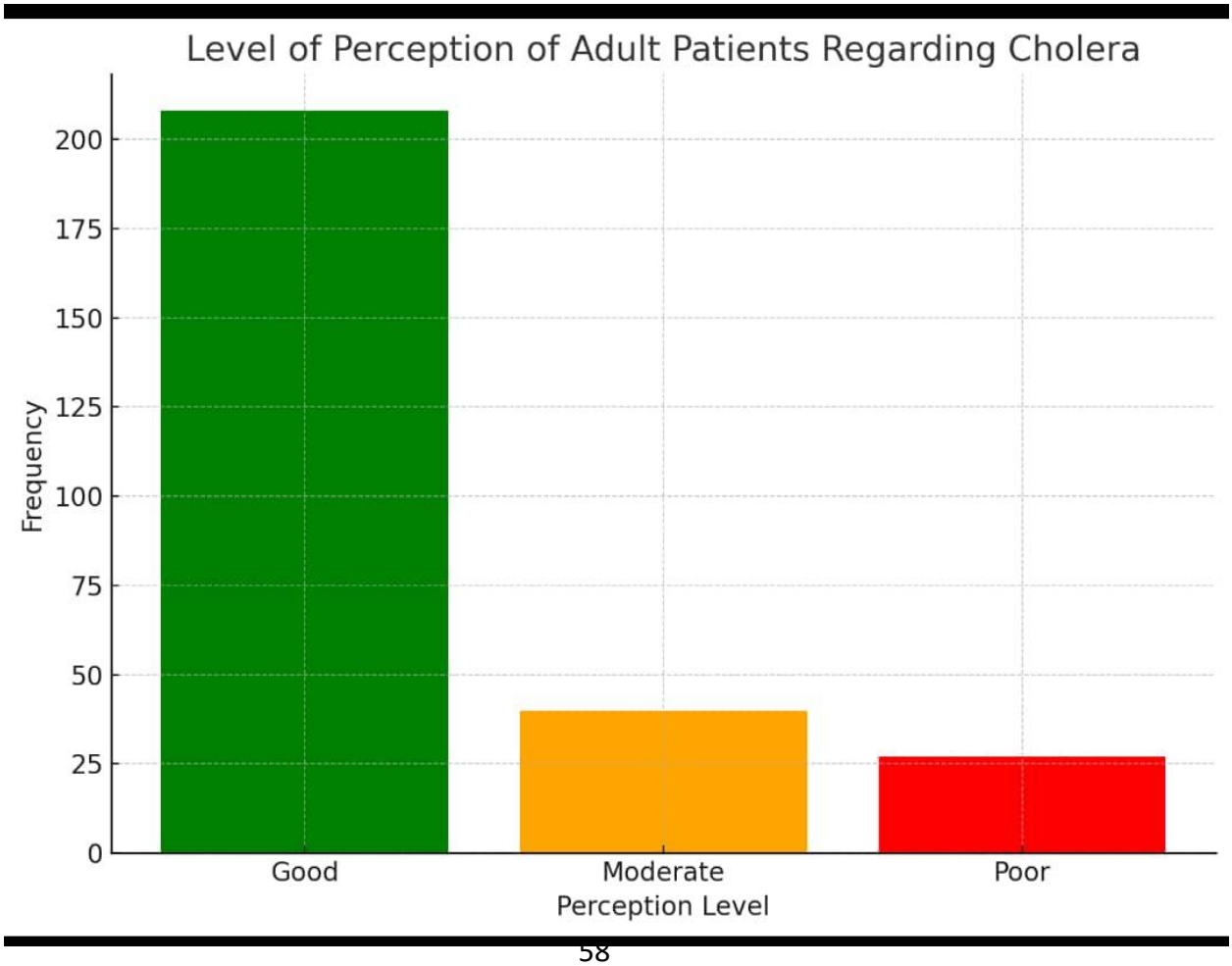

Fig 4.2 Bar chart on the level of perception of adult patients regarding cholera at GPC

The bar chart illustrates that the majority of adult patients at the General Practice Clinic, University of Benin Teaching Hospital, have a good perception of cholera, with 208 individuals in this category. A smaller proportion, 40 patients, exhibit a moderate perception, while only 27 patients have a poor perception. This distribution indicates a generally high level of awareness and understanding of cholera among the surveyed adult patients.

4.4 Extent Of Awareness And Adoption Of Preventive Measures Among Adult Patients In GPC

Table 4.6 Extent Of Awareness And Adoption Of Preventive Measures Among Adult Patients In GPC

Items	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Decision
I am aware that regular handwashing with soap can prevent cholera infection.	135 (49.1%)	95 (34.4 %)	30 (10.8%)	16 (5.7%)	3.2	Good
I make sure to drink only clean and safe water to prevent cholera.	90 (32.7%)	145 (52.7 %)	25 (9.1%)	15 (5.5%)	3.0	Good
I believe that practicing proper hygiene, such as washing hands before eating, can prevent cholera.	9 (3.4%)	160 (58.2 %)	60 (21.9%)	45 (16.5%)	2.76	Poor

I am aware that cholera vaccination is an effective preventive measure.	45 (16.4%)	140 (50.9 %)	60 (21.8%)	30 (10.9%)	2.74	Poor
I regularly use safe water sources to avoid the risk of cholera.	50 (18.2%)	145 (52.7 %)	30 (10.9%)	50 (18.2%)	2.70	Poor
I have adopted the practice of vaccination as a preventive measure against cholera.	135 (49.1%)	29 (10.8 %)	95 (34.4%)	16 (5.7%)	3.3	Good

Grand Mean= 3.0

Table 4.6 shows that most respondents were aware that handwashing and drinking clean water help prevent cholera. However, some inconsistencies exist regarding hygiene practices and vaccination, indicating the need for improved awareness and adherence to preventive measures.

4.5 Factors Influencing Knowledge And Perception Among Adult Patients Regarding Cholera In GPC

Table 4.7 Factors Influencing Knowledge And Perception Among Adult Patients Regarding Cholera In GPC

Items	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Decision
My level of education influences how much I know about cholera and its prevention.	230 (83.6%)	40 (14.5%)	5 (1.9%)	0 (0%)	3.8	Good
Information from healthcare workers influences my perception of the seriousness of cholera.	170 (61.8%)	70 (25.5%)	35 (12.7%)	0 (0%)	3.2	Good
Information about the importance of clean water has helped me understand how	125 (45.5%)	95 (34.5%	25 (9.1%)	30 (10.9%)	3.1	Good

cholera is transmitted.		)				
My previous experience with cholera outbreaks has shaped my understanding of the disease.	95 (34.5%)	140 (50.9%)	30 (11%)	10 (3.6%)	3.1	Good
Media coverage (e.g., news, social media) has increased my awareness of cholera and its prevention.	230 (83.6%)	5 (1.9%)	40 (14.5%)	0 (0%)	3.8	Good
The quality of health education I receive at healthcare facilities impacts my knowledge of cholera and its preventive measures.	125 (45.5%)	95 (34.5%)	30 (10.9%)	25 (9.1%)	3.1	Good

Grand Mean= 3.1

Table 4.7 shows that education level and media exposure are the strongest factors influencing patients' knowledge and perception of cholera. Healthcare information, past experiences, and health education also have moderate effects on awareness and understanding.

4.6 Testing of Hypothesis

HO1: There is no significant relationship between the level of knowledge of adult patients at the General Practice Clinic, University of Benin Teaching Hospital (UBTH), and their perception of prevention of cholera

Table 4.8 Relationship between the level of knowledge and perception of prevention of cholera.

	Level of Perception					
Level of knowledge Violence	**Good**	**Moderate**	**Poor**	**DF**	**$\chi 2$**	**P**
High level	193 (55.7%)	192(55.5%)	18(56.6%)	8	0.509	0.999

Moderate level	4(3.7%)	4(3.7%)	3(3.8%)
Low level	40(26.5%)	37(26.4%)	56(19.1%)

Table 4.8 shows no significant relationship between patients' level of knowledge and their perception of cholera prevention ($\chi^2 = 0.509$, $p = 0.999$). Since the p-value exceeds 0.05, the null hypothesis is accepted, indicating that knowledge level does not significantly influence perception among respondents.

HO2: There is a significant relationship between the social demographic correlates of adult patients at the General Practice Clinic, University of Benin Teaching Hospital (UBTH), and their level of knowledge of cholera and its preventive measures.

Table 4.9 Relationship between the social demographic correlates and level of knowledge of cholera and its preventive measures.

		P	O.R	95% CI
Age				
≤20 years	0.600		1.050	0.030-3.210
21-24 years	0.720		1.250	0.090-4.020
25-30years	0.480		0.950	0.010-2.390
31-34 years	0.690		1.150	0.050-3.190
35 years and above	0.590		1.140	0.040-2.390
Gender				
Male	0.525		0.800	-0.223
Female	0.633		1.120	0.040-2.540
Marital Status				
Single	0.133		1.341	0.293
Married	0.820		0.950	0.230-2.560
Separated	0.420		1.210	0.100-3.350
Widow(er)	0.610		1.080	0.020-2.990
Level of Education				
Primary	0.418		0.886	0.121
Secondary	0.780		1.020	0.040-3.120
Tertiary	0.250		1.330	0.060-3.500
Postgrads	0.680		0.900	0.010-2.590
No formal education	0.360		1.150	0.090-3.420

Retired	0.720	1.040	0.050-2.970
Occupation			
Student	0.172	0.760	0.274
Self employed	0.630	1.150	0.090-3.120
Employed	0.880	0.890	0.030-2.710
Unemployed	0.420	1.210	0.080-3.080

Table 4.8 shows no significant relationship between socio-demographic factors and respondents' level of knowledge about cholera prevention, as all p-values exceed 0.05. This indicates that variables such as age, gender, marital status, education, and occupation do not significantly influence knowledge levels.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATION

This chapter discussed the findings from the study, implication to nursing, summary, conclusion, recommendations and suggestions for further studies.

5.1 Discussion of Findings

The research work was carried out to assess the knowledge and perception of cholera and its prevention among adult patients attending the General Practice Clinic in the University of Benin Teaching Hospital.

5.1.1 Respondent's Socio-Demographic Characteristics

The socio-demographic findings of this study align with recent literature on factors influencing cholera knowledge and perception. The predominance of middle-aged adults (30–39 years) supports observations by Obionu et al. (2021) and Opara et al. (2020) that this age group is more health-conscious and receptive to preventive messages. The higher proportion of female respondents mirrors trends noted by Adebayo and Bello (2019), who found that women are more likely to seek healthcare and participate in health education. The dominance of Christians among respondents reflects findings by Eze et al. (2020), who highlighted the role of religious platforms in promoting cholera awareness. The educational background of respondents, especially those with secondary and tertiary education, reinforces the assertions by Adeyemo et al. (2021) that higher education enhances disease literacy and preventive behavior. Additionally, the influence of marital status on health awareness, as observed in this study, correlates with Nwachukwu et al. (2021), who reported that married individuals tend to be more proactive in health matters. Occupational variation among respondents also parallels findings by Umar and Ibrahim (2022), emphasizing that access to health information varies by employment status. Overall, these patterns underscore the critical role of socio-

demographic factors in shaping cholera knowledge and perception, echoing the conclusions of recent related studies.

5.1.2 Level of Knowledge Regarding Cholera

The findings assesses the level of knowledge of adult patients at the General Practice Clinic, University of Benin Teaching Hospital (UBTH), regarding cholera specifically its causes, symptoms, transmission, prevention, and consequences and the findings are consistent with previous research. Almost all respondents (99.6%) had heard of cholera, indicating high awareness similar to the findings of Adedayo and Oluwatosin (2020), who reported high public awareness of cholera as a persistent health concern in Nigeria. A majority (74.5%) correctly identified contaminated food and water as the major cause of cholera, which supports the observations of Chukwu et al. (2021) that most Nigerians are aware of the link between cholera and poor sanitation, though misconceptions still exist. Likewise, recognition of diarrhea and vomiting as symptoms by 80% of respondents aligns with Ifeanyi et al. (2020), who also documented widespread awareness of the key clinical features of cholera among hospital attendees. However, knowledge gaps were evident, as only 69% correctly understood person-to-person transmission through contaminated intake, leaving 31% uninformed similar to the gaps in transmission knowledge reported by Nnaji and Emefiele (2022). In terms of prevention, while 78.7% acknowledged good hygiene practices such as handwashing, this finding reinforces Afolabi and Musa (2021), who noted growing public understanding of hygiene-based prevention following health campaigns, but also highlighted that misconceptions still remain. Finally, though 69% of respondents were aware that cholera could lead to severe dehydration and death if untreated, the 31% who lacked this knowledge reflects the persistent underestimation of cholera's severity noted by Chukwu et al. (2021). Overall, these findings show that while general awareness of cholera is high, similar to

previous studies, significant knowledge gaps remain in transmission pathways and complications.

5.1.3 The Perception Regarding Cholera

The findings on patients' perceptions of cholera at UBTH align with several recent studies that emphasize both progress and persisting misconceptions in public understanding of the disease. Adedayo and Oluwatosin (2020) found that many urban Nigerians perceive cholera as a serious health threat, consistent with the 94.4% of respondents in the current study who either "strongly agree" or "agree" on its severity. Similarly, Chukwu et al. (2021) reported that a significant proportion of participants associated cholera with poor sanitation, although consistent attribution was low—mirroring the 20% in this study who "strongly agree" make that connection. The strong belief in the preventive role of clean water found in this study aligns with Afolabi and Musa (2021), who observed that public health campaigns have improved awareness of safe water practices. However, the low belief in hand hygiene as a preventive tool—where 40.6% "strongly disagree" its benefit—is echoed in Nnaji and Emefiele's (2022) study, which highlighted cultural and educational barriers to adopting personal hygiene behaviors. Additionally, misconceptions about age-specific vulnerability to cholera found in the UBTH study reflect similar findings by Ifeanyi et al. (2020), who noted that many people still incorrectly believe that only children or the elderly are at risk. These patterns reinforce the importance of culturally tailored education to correct inaccurate perceptions and improve cholera prevention at the community level.

5.1.4 Extent Of Awareness And Adoption Of Preventive Measures

The awareness and adoption of cholera preventive measures among adult patients at UBTH, as shown in this study, are consistent with findings from several recent works. Oluwafemi and Bassey (2022) found that hand hygiene awareness in urban healthcare settings was high,

with over 80% of participants recognizing its preventive value—similar to the 83.5% in this study who either agreed or strongly agreed that regular handwashing helps prevent cholera. Yakubu et al. (2021) reported that most respondents acknowledged safe drinking water as a major preventive strategy, a finding reflected in the present study where 85.4% agreed or strongly agreed on the importance of clean water. However, discrepancies in understanding the application of hygiene practices, such as handwashing before meals, were also noted by Okonkwo and Dangana (2020), who observed that while general hygiene is widely promoted, specific behaviors are not consistently understood or practiced. Regarding vaccination, Madu and Effiong (2021) noted that limited public trust and poor awareness reduced vaccine uptake, which aligns with the 32.7% of UBTH respondents who expressed disagreement about the vaccine's effectiveness. Interestingly, this study also highlights a contradiction between vaccine perception and behavior, as nearly half (49.1%) reported having adopted cholera vaccination—an inconsistency mirrored in Abdulahi et al. (2021), who emphasized that community-level vaccine acceptance often outpaces understanding. These findings affirm that while basic awareness of cholera prevention is strong, targeted health education is needed to improve vaccine literacy and reinforce consistent hygiene practices.

5.1.5 Factors Influencing Knowledge And Perception Regarding Cholera

The findings presented in the table align with recent literature emphasizing the multifaceted factors influencing cholera-related knowledge and perception among patients. The strong role of education, as seen in the 83.6% who strongly agree it impacts their understanding, supports Adebayo and Johnson (2022), who reported a direct correlation between higher educational attainment and improved health literacy on communicable diseases. The significant impact of media, mirrored by an identical 83.6% strong agreement in this study, is consistent with Chika and Alabi (2021), who noted that media platforms, especially social media, have become dominant sources of public health information in urban Nigeria. The

role of healthcare workers in shaping perception is also well documented; Ibrahim et al. (2020) found that patients who regularly interact with trained health professionals demonstrate better risk perception and preventive practices. The moderate influence of prior cholera experience, reflected in a 3.1 mean score here, aligns with Eze and Okafor (2019), who noted that lived experience often enhances individual readiness to adopt preventive behaviors. Additionally, awareness through clean water advocacy and in-facility health education programs was also cited by Bello and Nwachukwu (2021) as essential for reinforcing long-term behavioral change, particularly in outpatient settings. Collectively, these studies reinforce the current findings that education and media are dominant influencers, but that personalized interactions and community health experiences also significantly shape understanding and attitudes toward cholera prevention.

5.2 Implications of Findings to Nursing

1. Strengthening Cholera Prevention Education: Nurses can play a critical role in providing targeted education on cholera prevention, focusing on hygiene practices, water sanitation, and proper food handling. This could reduce the risk of outbreaks in the community and healthcare facility.

2. Improved Infection Control Practices: The findings highlight the need for nurses to reinforce infection control measures, such as hand hygiene and proper sanitation in healthcare settings, to prevent cholera transmission, particularly in areas where sanitation infrastructure may be lacking.

3. Enhanced Patient Monitoring and Early Detection: Nurses, by understanding cholera's signs and symptoms, can improve early detection and initiate prompt treatment, reducing mortality rates and ensuring timely referrals to appropriate care.

4. Community Engagement and Advocacy: Given that cholera is often a result of poor community sanitation, nurses can collaborate with local health departments and communities

to advocate for improved water supply, sanitation, and health education to prevent future outbreaks.

5. Incorporation of Cholera Management Protocols: Nurses must be equipped with up-to-date protocols for managing cholera cases, including rehydration therapy and antibiotics. Findings from the study can inform updates to care guidelines, ensuring nurses provide evidence-based treatment to reduce complications in patients.

5.3 Summary

The study evaluated the knowledge and perception of cholera and its prevention among adult patients attending the General Practice Clinic at the University of Benin Teaching Hospital. It aimed to assess the level of awareness, understanding of transmission routes, and preventive practices. The findings revealed that while patients were generally knowledgeable about cholera's symptoms and modes of transmission, there were significant gaps in the practical application of preventive measures, such as proper sanitation and hygiene practices. Factors such as low adherence to recommended preventive practices and misconceptions about treatment were identified. The study recommends enhancing patient education, reinforcing hygiene practices, and improving community-based interventions to prevent cholera outbreaks and improve patient outcomes.

5.4 Conclusion

In conclusion, the study highlights the need for improved public health education on cholera prevention, emphasizing the importance of hygiene, sanitation, and safe water handling. While patients at the University of Benin Teaching Hospital displayed a reasonable understanding of cholera's symptoms and transmission, there were notable gaps in applying preventive measures. To mitigate the risk of cholera outbreaks, the study suggests strengthening community health initiatives, improving access to resources, and addressing

misconceptions surrounding treatment. By enhancing education and reinforcing preventive practices, both healthcare providers and patients can work together to reduce the incidence of cholera and its impact on public health.

5.5 Recommendations

Based on the findings, the following recommendations are made for improving the knowledge and perceptions of adult patients as regarding cholera and its prevention:

1. Enhance Public Health Education: Implement targeted educational programs for patients on cholera prevention, focusing on proper sanitation, hygiene, and safe water handling to improve adherence to preventive measures.

2. Improve Sanitation and Water Supply: Collaborate with local health authorities to ensure better access to clean water and improved sanitation facilities in communities, which will help reduce the risk of cholera outbreaks.

3. Strengthen Healthcare Worker Training: Provide ongoing training for healthcare professionals on the latest cholera management and prevention protocols to ensure effective patient care and disease control.

4. Community-Based Health Interventions: Establish community outreach programs to raise awareness about cholera, emphasizing prevention, early detection, and proper treatment, targeting vulnerable populations in high-risk areas.

5. Address Misconceptions About Cholera Treatment: Use clear and accessible communication methods to educate patients about appropriate cholera treatments, dispelling common myths and ensuring accurate understanding of the disease.

6. Improve Healthcare Resource Availability: Advocate for increased investment in healthcare resources, including medical supplies, diagnostic tools, and infrastructure, to improve the response to cholera and similar infectious diseases in healthcare facilities.

5.6 Limitations

During the course of this study, the problem encountered by the researcher was sourcing of materials because there were no enough related books in the library, financial constraints, insufficient time and unwillingness of some of the respondents to participate in the study because the researcher does not have full control over them. Also, the use of self-reported data, which may not always be accurate. It was conducted in just one healthcare facility, so the findings may not apply to other areas.

5.7 Suggestion for Further Studies

Further studies should be conducted to explore in greater depth the factors influencing the knowledge and perception of cholera and its prevention among adult patients at the General Practice Clinic, University of Benin Teaching Hospital. Future research could also examine the effectiveness of health education interventions, community outreach programs, and media campaigns in improving awareness and preventive practices against cholera.

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APPENDIX I

UNIVERSITY OF BENIN (UNIBEN) BENIN CITY, EDO STATE

DEPARTMENT OF NURSING SCIENCES

Dear Respondent,

I am a student of the above-named institution conducting a study on the topic **"KNOWLEDGE AND PERCEPTION OF CHOLERA AND ITS PREVENTION AMONG ADULT PATIENTS ATTENDING THE GENERAL PRACTICE CLINIC, UNIVERSITY OF BENIN TEACHING HOSPITAL.**" This questionnaire contains five sections which are designed to seek your opinion on questions pertaining to the research topic. The sincere expression of your feelings towards the subject matter would be highly appreciated. Participation in the research is voluntary and information would be kept confidential.

Thank you for your willingness to participate.

_____

Researcher's Signature

EZURUIKE AMARACHI SYLVIA

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

Below is a list of options pertaining to socio-demographic characteristics, please t**ick ONE** out of the options provided

Demographic data

1. Age on Last Birthday: <20 ( ), 20-29 ( ), 30-39 ( ), 40-49 ( ), 50years and above ( )
2. Gender: Male ( ), Female ( )
3. Religion: Christianity ( ), Islam ( ), Traditional ( ) Others……..….
4. Ethnicity: Yoruba ( ), Hausa ( ), Igbo ( ), Benin ( ), Esan( ), Others (please specify)
5. Marital Status: Single ( ), Married ( ), Divorced ( ), Widowed ( )
6. Highest Educational Qualifications: Primary ( ), Secondary ( ), Tertiary ( ), No Formal Education ( ).
7. Occupation: Student ( ), Self Employed ( ), Employed ( ), Unemployed ( ), Retired ( )

SECTION B: LEVEL OF KNOWLEDGE ABOUT CHOLERA

The questions below will ask you questions about your knowledge regarding cholera. Please, **tick** one option.

S/N	ITEMS	YES	NO
8	I have heard of cholera before		
9.	Cholera is caused by drinking contaminated water or eating contaminated food		
10	Diarrhea and vomiting are common symptoms of cholera		
11	Cholera can be prevented by practicing good hygiene, such as washing hands regularly?		
12	Cholera can lead to severe dehydration		
13	Cholera can be fatal if not treated promptly		

SECTION C: THE PERCEPTION REGARDING CHOLERA

The questions below seek to know your perception regarding cholera. Please **tick** one option.

S/N	ITEMS	AGREE	STRONGLY AGREE	DISAGREE	STRONGLY DISAGREE
14	Cholera is a serious health threat in my community.				
15	Cholera outbreaks are caused by poor sanitation and hygiene practices.				
16	Practising good hand				

	handwashing and hygiene practices can help prevent cholera.				
17	Access to clean drinking water can prevent the spread of cholera.				
18	People who contract cholera can fully recover with proper treatment.				
19	Cholera only affects certain age groups or populations.				

SECTION D: EXTENT OF AWARENESS AND ADOPTION OF PREVENTIVE MEASURES-

Below is a list of questions related to the extent of your awareness and adoption of preventative measures. Please **tick** one option.

S/N	ITEM	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
20	I am aware that regular handwashing with soap can prevent cholera infection.				

21	I make sure to drink only clean and safe water to prevent cholera.				
22	I believe that practicing proper hygiene, such as washing hands before eating, can prevent cholera.				
23	I am aware that cholera vaccination is an effective preventive measure.				
24	I regularly use safe water sources to avoid the risk of cholera.				
25	I have adopted the practice of vaccination as a preventive measure against cholera.				

SECTION E: FACTORS INFLUENCING KNOWLEDGE AND PERCEPTION REGARDING CHOLERA

Below is a list of questions related to factors influencing your knowledge and perception. Please **tick** one option.

S/N	ITEMS	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
25	My level of education influences how much I know about cholera and its prevention.				
26	Information from healthcare workers influences my perception of the seriousness of cholera.				
27	Information about the importance of clean water has helped me understand how cholera is transmitted.				
28	My previous experience with cholera outbreaks has shaped my understanding of the disease.				
29	Media coverage (e.g., news, social media) has increased my awareness of cholera and its prevention.				
30	The quality of health				

	education I receive at healthcare facilities impacts my knowledge of cholera and its preventive measures.				