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# Determinants of Health Seeking Behaviour among Typhoid Fever Patients in Buea Health District, Cameroon

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## ABSTRACT

**Despite the availability of effective biomedical treatments, typhoid fever remains endemic in Buea Health District, Cameroon, underscoring a critical gap between disease awareness and health-seeking behavior (HSB). This article aimed to examine how knowledge of typhoid transmission influences HSB among residents with typhoid symptoms in Buea Health District. Guided by Avedis Donabedian's Theory of Healthcare Quality, which postulates that the quality of care is determined by the interrelationship between healthcare structures, processes, and outcomes, the study explored how system-level and individual factors shape decisions to seek medical treatment. Methodologically, a quantitative cross-sectional survey was conducted among 150 adults selected through systematic sampling in selected health facilities. Data were collected using structured questionnaires and analysed using descriptive statistics and multiple linear regressions. Findings revealed that demographic factors, particularly age, significantly influenced HSB, with individuals under 30 years comprising 68.7% of respondents and demographic variables showing a strong positive relationship with care-seeking ($\beta = 0.064$, $p = 0.003$). Conversely, socio-economic factors such as income and occupation, while positively correlated, were not statistically significant predictors ($\beta = 0.031$, $p = 0.355$). Although 61.3% of respondents correctly identified contaminated water as a transmission route and 50% linked typhoid to poor sanitation, knowledge of transmission showed no significant impact on HSB ($\beta = 0.012$, $p = 0.732$). The model explained 45.3% of the variance in HSB ($R^2 = 0.453$). These findings imply that health interventions in Buea should shift from generalised education to demographically focused strategies. It is recommended that public health policy prioritize youth-centered outreach including mobile clinics, peer education, and digital campaigns; to improve timely and appropriate health-seeking behaviors.**

**Keywords:** Typhoid fever, Health-Seeking Behavior, Factors, Socio-demographic, Socio-Economic, Public Health, Knowledge.

## INTRODUCTION

Typhoid fever remains a significant public health concern globally, particularly in low- and middle-income countries (LMICs) where access to clean water, improved sanitation, and quality healthcare services is often limited. The World Health Organization (WHO, 2023) estimates that between 9 and 21 million people contract typhoid fever each year, resulting in approximately 110,000 to 161,000 deaths. Despite being both preventable and treatable, typhoid fever continues to persist in endemic regions, notably in sub-Saharan Africa and South Asia, where disease surveillance, vaccination uptake, and healthcare responsiveness are frequently inadequate (WHO, 2023).

The ongoing burden of typhoid fever is shaped by a complex interplay of environmental, socio-economic, and demographic determinants. Structural factors such as poverty, overcrowded living conditions, inadequate sanitation, and limited access to clean water create environments conducive to the transmission of *Salmonella enterica* serovar Typhi, commonly called Salmonella Typhi; the causative agent of typhoid fever (Crump & Mintz, 2010). Alongside these contextual factors, individual and community-level health-seeking behavior (HSB) is increasingly recognized as a critical determinant of disease outcomes. Research has shown that decisions regarding where, when, and how to seek healthcare are influenced by variables such as income level, educational attainment, gender, cultural beliefs, previous experiences with health services, and perceived illness severity (Msemo et al., 2016; Crump et al., 2018).

In many endemic settings across Africa and Asia, individuals with typhoid-like symptoms often delay or avoid formal healthcare, frequently turning to self-medication, informal drug vendors, or traditional healers (Msemo et al., 2016). For example, findings from the Typhoid Surveillance in Africa Program (TSAP) revealed that although a majority of febrile patients eventually sought care, many initially bypassed formal health facilities, leading to delayed diagnosis and suboptimal treatment outcomes (Crump et al., 2018). Similarly, studies from South Asia have demonstrated that individuals with higher socio-economic status are more likely to utilize formal healthcare services than those from marginalized communities (Crump et al., 2018).

In addition to socio-demographic and economic factors, knowledge and awareness of typhoid fever significantly influence health-seeking practices. Limited understanding of transmission routes, symptoms, and prevention strategies often leads to inappropriate or delayed responses to illness (Akinyemi et al., 2005). Conversely, individuals with greater health literacy and disease-specific knowledge are more likely to identify symptoms early, seek appropriate care, and comply with treatment regimens (Ajibade et al., 2013). Within the Cameroonian context, Njoya et. al (2021) posit that typhoid fever continues to pose a major public-health threat. They reported a survival rate of just 54 % at 30 days among 500 Cameroonian typhoid fever patients from 2015-2020. In the specific semi-urban and peri-urban setting of the Buea Health District (South-West Region), a laboratory-based investigation found a positivity rate of 13.9 % (50 out of 360 suspected cases) for stool-culture confirmed Salmonella in 2017 (Sunday, et al. 2023). In this area, persistent challenges such as inadequate water supply, poor sanitation, and inconsistent care-seeking behaviors contribute to the disease's sustained prevalence. Understanding how demographic characteristics, socio-economic status, and knowledge of typhoid transmission influence health-seeking behavior among residents with typhoid symptoms is crucial for informing locally appropriate and targeted public health interventions. This paper sets out to examine how demographic characteristics, socio-economic status, and knowledge of typhoid transmission influence health-seeking behavior among residents experiencing typhoid symptoms in the Buea Health District, Cameroon.

## Statement of the Problem

Typhoid fever, a preventable and treatable bacterial infection, should pose minimal threat to communities with reliable access to clean water, adequate sanitation, robust healthcare infrastructure, and comprehensive health education. This is when individuals can recognise symptoms early, seek timely medical care, and adhere to appropriate treatment protocols, thereby limiting disease transmission, preventing complications, and reducing mortality rates (World Health Organization, 2023). Effective health-seeking behavior (HSB) grounded in

informed decision-making and facilitated by accessible health services, is fundamental to achieving optimal outcomes in the management of infectious diseases such as typhoid fever. However, this ideal scenario is far from reality in many endemic regions, particularly across sub-Saharan Africa and South Asia. In these settings, typhoid fever persists as a major public health burden, primarily due to a combination of inadequate sanitation, poor access to safe drinking water, fragile health systems, and delayed or inappropriate treatment-seeking behaviors (Crump & Mintz, 2010; WHO, 2023). The discrepancy between the ideal and the actual reflects a deeper set of systemic and behavioral challenges.

A growing body of literature indicates that health-seeking behavior in such contexts is influenced by a complex interplay of demographic characteristics, socio-economic status, cultural beliefs, and prior healthcare experiences (Msemo et al., 2016). Individuals from lower-income households or with limited formal education are more likely to delay seeking formal medical care, opting instead for informal sources such as self-medication, traditional healers, or unregulated drug vendors. These patterns of behaviour contribute to poor clinical outcomes, prolonged infectious periods, and increased risk of community-wide transmission. Furthermore, knowledge and awareness of typhoid fever, particularly regarding its causes, symptoms, and modes of transmission-emerge as crucial determinants of appropriate health-seeking practices. Studies have shown that limited or incorrect knowledge often leads to misinterpretation of symptoms and underestimation of disease severity, which in turn delays timely care (Akinyemi et al., 2005). Conversely, individuals with accurate disease-related knowledge are more likely to adopt preventive measures and seek prompt treatment (Ajibade et al., 2013).

In Cameroon, typhoid fever remains a significant and recurrent public health challenge, especially in semi-urban and peri-urban areas such as the Buea Health District. Despite ongoing national and local interventions aimed at improving sanitation, access to clean water, and healthcare delivery, the disease continues to cause repeated outbreaks and strain already limited health system resources. Yet, there is a notable paucity of localised evidence on how socio-economic status, demographic factors, and knowledge about typhoid fever influence health-seeking behavior among symptomatic individuals in this region. This knowledge gap warrants focused research to inform context-specific interventions that can enhance timely and appropriate care-seeking practices. Addressing this gap, the present study sets out to examine how demographic characteristics, socio-economic status, and knowledge of typhoid transmission influence health-seeking behavior among residents with typhoid symptoms in the Buea Health District, Cameroon. By addressing these issues, the paper seeks to generate empirical evidence to support the design of targeted health education campaigns, inform public health planning, and contribute to reducing the burden of typhoid fever in the region. Specifically, the paper was guided by the following research questions.

- In what ways do demographic and socio-economic factors influence the health-seeking behavior of typhoid fever patients in Buea Health District?
- To what extent does knowledge of typhoid fever transmission affect health-seeking behavior in Buea Health District?

## LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Health-seeking behavior (HSB) for typhoid fever is significantly shaped by demographic variables such as age, gender, and residential setting. Studies consistently reveal that children


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and adolescents bear the highest burden of typhoid fever globally, with Stanaway et al. (2017) reporting that individuals under 15 account for the majority of cases. This age-specific vulnerability often interacts with delayed recognition of symptoms and limited decision-making autonomy. In rural Tanzania, Ndiaye et al. (2020) found that individuals residing in remote areas, particularly those with limited transportation options, were more likely to rely on traditional healers and delay formal treatment. Tchuem Tchuenté et al. (2020) similarly observed in Cameroon that women and caregivers were more proactive in seeking formal healthcare than men, reflecting gendered patterns in health decision-making that influence disease outcomes across various contexts.

Gender dynamics further complicate the pathways to care, especially in patriarchal societies where men control household finances. Oni et al. (2020) demonstrated that, in Nigeria, while women, especially mothers-were more likely to initiate care for children with typhoid symptoms, their efforts were often hindered by a lack of financial autonomy and the need for male approval. Such findings underscore the need for gender-sensitive interventions that empower women and promote joint household decision-making. Tchuem Tchuenté et al. (2020) also noted that the gender gap in HSB in Cameroon is exacerbated by cultural beliefs that undervalue female health concerns, thereby delaying timely treatment and increasing complications.

Socio-economic status (SES) remains one of the most consistent predictors of health-seeking behavior for typhoid fever. Bwire et al. (2021), in a Ugandan cross-sectional study, found that individuals with higher income and education levels were more likely to identify symptoms early and seek formal medical care promptly. In contrast, low-income populations often delayed treatment due to financial hardship and turned to informal drug vendors or traditional remedies. These findings align with those of Ambebila et al. (2020) and Yakum et al. (2017), who observed that household wealth directly influenced healthcare utilization across various African settings. Erus et al. (2015) further corroborated this in Turkey, where low-income families faced limited access to healthcare despite the availability of services, emphasizing that affordability remains a structural barrier globally.

Education has a dual role in influencing both recognition of disease symptoms and the quality of care sought. In Kisumu, Kenya, Omondi et al. (2019) found that individuals with higher educational attainment were more likely to recognize typhoid symptoms accurately and were less inclined to use traditional medicine. However, even among the educated, some misconceptions about typhoid transmission persisted. Akinola et al. (2018) in Nigeria found that only 40% of respondents understood that typhoid is transmitted through contaminated food and water. These gaps suggest that while formal education improves awareness, targeted health education is still essential to address misconceptions and promote appropriate health-seeking behavior.

Geographic access to health facilities further modulates the relationship between SES and health-seeking. In Tanzania, Ndiaye et al. (2020) noted that urban residents accessed care more promptly due to better infrastructure, while rural dwellers faced significant transportation and informational barriers. In Mozambique, Hanson et al. (2015) found that facility proximity and staffing levels influenced service uptake more than referral systems or tertiary-level care options. In Ghana, Breiman et al. (2012) linked higher typhoid incidence in rural areas to poor

sanitation, which, coupled with inadequate access to care, led to treatment delays and poorer outcomes. Pieters et al. (2018) and Carmeli et al. (1993) found that delayed hospitalization, rather than bacterial virulence, was a primary driver of mortality in Africa.

Knowledge about typhoid transmission is a critical determinant of when and how individuals seek care. Akinola et al. (2018) observed that many individuals in endemic regions misunderstood typhoid's causes, which affected how they responded to symptoms. However, knowledge-based interventions have shown promise. Oluoch et al. (2019) and Echard et al. (2020) demonstrated that targeted health education significantly improved community awareness and adoption of preventive behaviors. Nevertheless, Tchouaket et al. (2021) warned that traditional beliefs in remote populations often counteract formal health messaging, underscoring the need for culturally tailored education strategies that resonate with local belief systems and address deeply held misconceptions.

The interaction between socio-economic status and knowledge is also significant. Omondi et al. (2019) noted that while higher education improved symptom recognition, economic limitations still restricted access to formal care, revealing that knowledge alone does not guarantee action. Similarly, Bwire et al. (2021) showed that although higher-income individuals had better awareness, the combined effects of affordability, distance, and cultural norms still shaped their care choices. These studies affirm that knowledge must be supported by enabling environments, both financial and infrastructural-for effective health-seeking behavior to occur.

Broader socio-cultural and institutional barriers further influence HSB for typhoid fever. Studies by El Kahi et al. (2012), Okunola and Irinoye (2016), and Metta (2016) revealed that illness perceptions, stigma, and cultural framing discouraged formal healthcare use in several African contexts. Systematic reviews by Rudan et al. (2012) and Morgan et al. (2013) found that delayed pediatric care was frequently due to poor symptom recognition, mistrust of health systems, and cost barriers. Moreover, the emergence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) strains of Salmonella Typhi, as reported by Parry et al. (2002), Laxminarayan et al. (2013, 2016), and Britto et al. (2018a, 2018b), has reduced treatment efficacy and further discouraged trust in health services, particularly in under-resourced settings (Marks et al., 2017).

Delays in health-seeking are well documented across sub-Saharan Africa. In Nigeria and Cameroon, over 65% of patients reportedly postpone seeking treatment for typhoid fever due to low awareness, cultural beliefs, transport issues, and previous negative experiences with the healthcare system (Bola et al., 2020; Nwokolo & Asogwa, 2019; Ali & Fatima, 2018; Nji et al., 2022). These delays not only increase the risk of complications but also raise the likelihood of continued community transmission. Tchouaket et al. (2021) reaffirmed that socioeconomic status remains a critical factor in determining who seeks care and how quickly they do so, highlighting an urgent need to address the structural and cultural barriers that perpetuate health inequities.

Encouragingly, interventions targeting community engagement and education have shown measurable success in improving HSB. Mouokeu et al. (2021) demonstrated that community-based education programs in Cameroon significantly improved typhoid knowledge and


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increased formal care-seeking behavior. Similarly, Okwuokenye and Nwankwo (2022) found that culturally tailored health education led to improved health service uptake. However, persistent skepticism, traditional belief systems, and gender-related constraints continue to limit effectiveness (Nji et al., 2022). Moreover, studies by Afolabi et al. (2017), Kwan et al. (2021), and Okeke and Nwachukwu (2020) show that even after care is accessed, poor treatment adherence, driven by cost, side effects, and weak communication, reduces recovery rates. Hygiene practices post-treatment also remain inconsistent, with only 60% compliance reported by Okeke et al. (2020). These findings underscore the importance of integrating economic, educational, and psychosocial support into intervention design to improve health-seeking behavior and health outcomes.

## THEORETICAL FRAMEWORK: HEALTH-SEEKING BEHAVIOR THEORY

This article adopts Donabedian's Theory of Healthcare Quality as its framework for analysis to better understand how health system factors interact with socio-demographic and behavioural determinants. Developed in the 1960s, Donabedian's model introduced a systematic approach for evaluating the quality of medical care at a time when healthcare quality was largely viewed as subjective and unmeasurable. Donabedian (1966), established a conceptual foundation for assessing healthcare systems through three interrelated dimensions: structure, process, and outcome, which together determine the overall quality and effectiveness of healthcare services (Donabedian, 1988; 2005). The core argument of this theory is that the quality of medical care can be systematically evaluated through three interrelated and mutually reinforcing components, namely, structure, process, and outcome. The theory posits that structure constitutes the foundational elements of healthcare delivery, encompassing the physical infrastructure, medical equipment, human resources, and administrative systems that enable service provision. Process represents the actual mechanisms and interactions through which care is delivered, including clinical decision-making, diagnostic accuracy, treatment procedures, provider-patient communication, and adherence to professional standards. Outcomes denote the measurable effects of healthcare, such as patient recovery, reduction in morbidity and mortality, satisfaction, and overall well-being. Donabedian's central proposition is that these components are causally linked: a robust structure facilitates efficient processes, which, in turn, generate desirable health outcomes. Importantly, the theory emphasizes that healthcare quality cannot be judged solely by outcomes but must also account for the organizational conditions and procedural actions that produce those results (Donabedian, 1988).

The relevance of Donabedian's Theory of Healthcare Quality to this paper lies in its capacity to explain how the quality of healthcare structures and processes influences the health-seeking behaviour of individuals with typhoid fever symptoms in the Buea Health District. The theory provides a conceptual framework for interpreting how systemic factors, such as the availability of healthcare infrastructure, the competence of health personnel, and the efficiency of service delivery, shape individuals' perceptions of, and engagement with, formal healthcare services. In resource-constrained settings like Buea, where facilities are under-equipped and human resources overstretched, deficiencies in structural elements can undermine public confidence and lead to delay or inappropriate treatment-seeking. Likewise, weaknesses in care processes, including prolonged waiting times, inconsistent diagnostic practices, and poor provider-patient communication, may discourage the use of formal health services and foster reliance on self-medication or traditional remedies.

Despite its wide application of this theory, it has been criticized for certain limitations. Scholars argue that it tends to underemphasize the social determinants of health, including poverty, education, and cultural norms-that profoundly influence health-seeking decisions, especially in low and medium income countries (McDonald et al., 2013). The model's linear structure-process-outcome relationship has also been viewed as overly simplistic, overlooking the complex feedback loops and contextual variations present in real-world health systems. Moreover, the model provides limited treatment of patient agency and behaviour, elements that are central to understanding how individuals interpret illness and decide when and where to seek care (Campbell et al., 2000). Nonetheless, Donabedian's theory remains highly relevant to this article's objectives, as it offers a structured framework for linking healthcare quality to individual health behaviour. By applying the model to the determinants of health-seeking behaviour among typhoid fever patients in Buea, this study integrates both systemic and individual-level perspectives. It posits that demographic characteristics, socio-economic status, and knowledge of typhoid transmission influence how individuals perceive and respond to the quality of available healthcare services.

## SCOPE AND METHODOLOGY

This study is geographically situated in the Buea Health District in the Southwest Region of Cameroon, focusing on hospitals, clinics, and health facilities where typhoid fever patients seek treatment. Both in-patient and out-patient typhoid cases within this area were included. The choice of Buea is significant due to the ongoing Anglophone armed conflict, which has led to population concentration in the subdivision, increased pressure on healthcare services, and a marked deterioration of previously high sanitation standards. These conditions have created an environment conducive to typhoid transmission, evidenced by a sharp increase in reported cases (Fonkoua et al., 2023). Despite rapid infrastructural development, sanitation continues to decline, further exacerbating health risks.

The temporal scope spans from 2016, coinciding with the launch of Cameroon's National Health Development Plan (NHDP), to 2024 when data collection was completed. This timeframe allowed for comprehensive data gathering across health facilities, including patient surveys, and healthcare provider assessments. It also captured seasonal variations in typhoid incidence, facilitating a robust analysis of health-seeking behaviors influenced by environmental factors. Additionally, the period permitted thorough literature review, ethical clearances, pilot testing, and adjustment for potential logistical challenges during fieldwork.

Scientifically, the study examined health-seeking patterns such as frequency of facility visits, use of formal versus informal care, treatment adherence, and determinants influencing these behaviors. Finally, socio-economic, demographic and infrastructural barriers impacting access to quality care were explored. This multidimensional scope enables the paper to generate context-specific evidence to inform effective public health interventions aimed at reducing the burden of typhoid fever in Buea Subdivision.

Regarding the methodology, this paper employed a quantitative, cross-sectional survey design to examine the relationship between demographic factors, socio-economic status, knowledge of typhoid fever, and health-seeking behaviors among residents of the Buea Health District who had experienced symptoms of typhoid fever within the previous 12 months. Aligned with Firestone's (1987) rationale, the quantitative approach minimised individual bias and


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emphasized standardised procedures, facilitating the generation of generalisable statistical data-such as the frequency of visits to health care facilities-and enabling the analysis of patient satisfaction and perceived access to care.

The population for this study comprised residents of Buea Health District, estimated at 300,000-350,000 people, with a specific focus on individuals diagnosed with typhoid fever and healthcare providers who manage their treatment. The target population consisted of adults aged 18 years and above residing in Buea Subdivision who had either experienced symptoms consistent with typhoid fever or received a diagnosis within the past year. This targeted population allowed for a comprehensive exploration of health-seeking behaviors and healthcare delivery in the area. Typhoid patients provided insights into patterns of healthcare utilisation, while healthcare providers offered perspectives on service quality, resource limitations, diagnostic capacity, and treatment protocols. Together, these viewpoints highlighted systemic barriers to effective care and informed understanding of patient-provider interactions influencing health outcomes. To obtain a representative sample of typhoid fever patients, a systematic random sampling technique was used, selecting every 10th patient from an ordered list of 1,500 treated individuals across health facilities in Buea Subdivision. The sampling interval (k) was calculated using the formula:

$$k = \frac{\text{Population size (N)}}{\text{Sample size (n)}} = \frac{1500}{150} = 10$$

The starting point was randomly chosen as patient number 4, and every 10th patient thereafter was selected (for example, 4, 14, 24..., 1494). This method ensured an even distribution and minimized clustering. The total study sample comprised 150 survey respondents.

Structured questionnaires were employed to collect quantitative data. The questionnaire, informed by the study's objectives and relevant literature, was administered to systematically selected patients who had received or were receiving treatment for typhoid fever in selected health facilities within Buea Subdivision. It primarily comprised closed-ended items designed to capture key variables such as socio-demographic characteristics, health-seeking behavior, patient satisfaction, post-treatment outcomes, and barriers to accessing care. To ensure validity and clarity, the instrument was pre-tested in a health facility outside the study sample, and minor revisions were made based on feedback regarding wording, sequencing, and flow. Data collection occurred in early 2024, with questionnaires administered in person to ensure clarity and address any potential language or literacy challenges. The structured format facilitated consistent and systematic data collection, enabling robust quantitative analysis and supporting the study's goal of assessing both individual and systemic factors affecting treatment outcomes for typhoid fever. The questionnaire comprised four sections: demographics, socio-economic status, knowledge of typhoid fever, and health-seeking behavior.

Reliability was addressed by assessing the internal consistency and coherence of the questionnaire, ensuring it could consistently capture data aligned with the study's objectives. Validity was established through content and face validation. The questionnaire was developed based on a thorough review of existing literature and validated tools, ensuring comprehensive coverage of key constructs such as demographics, health-seeking behavior, patient satisfaction,

and barriers to treatment. Academic supervisors and subject-matter experts reviewed the instrument to confirm alignment with theoretical frameworks and study objectives. Content validity was ensured by mapping each item to the core research questions. Face validity was strengthened through pretesting, which confirmed that the items were generally well understood and contextually appropriate. The feedback led to minor revisions in question structure and language. These steps helped ensure the questionnaire's ability to generate reliable, valid, and generalisable data. The rigorous development and validation process reinforced the instrument's credibility and its suitability for structured quantitative analysis.

Empirical data were presented using descriptive statistical methods, including frequencies, percentages, and cumulative percentages, to illustrate patterns and relationships among key variables related to health-seeking behavior, knowledge of typhoid fever, and healthcare access in Buea Subdivision. Data were entered, cleaned, and coded using Microsoft Excel and results were displayed in frequency tables to enhance clarity and readability. Tabular presentation allowed for efficient summarisation and easy comparison across variables. Descriptive statistics supported the identification of prevailing trends and common experiences among patients. This approach enabled a systematic, evidence-based analysis aligned with the study's objectives. Overall, the quantitative data presentation facilitated clear interpretation and informed conclusions about patient behaviors and health system performance.

The paper also utilised inferential statistical method to analyse data on the health-seeking behavior of typhoid fever patients in Buea Subdivision. Multiple linear regression was employed to examine the influence of independent variables on the dependent variable that is, health-seeking behavior (HSB). The regression model was specified as:

$$\mathbf{HSB = \beta_0 + \beta_1(KTT) + \beta_2(QS) + \beta_3(DEM) + \beta_4(SEF) + \beta_5(CB) + \varepsilon}$$

where:

- $\boldsymbol{\beta_0}$ = Constant term
- **HSB** = Health-Seeking Behavior
- **KTT** = Knowledge of Typhoid Transmission
- **QS** = Quality of Services
- **DEM** = Demographic Characteristics
- **SEF** = Socio-Economic Factors
- **CB** = Cultural Beliefs
- $\boldsymbol{\varepsilon}$ = Error term (random disturbance)

**Table 1: Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .453[a] | .406 | .178 | .45447 |

Source: Field Survey, 2024

The coefficient of multiple determinations is 0.453. This shows that the model specified explains 45.3% of all variations in health seeking behavior. Hence the model is well specified.

This method allowed for the simultaneous evaluation of multiple predictors, identification of statistically significant factors ($p < 0.05$), and control of confounding variables. Regression was


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suitable due to the continuous nature of the HSB variable, derived from a composite score of healthcare utilisation. The model explained 45.3% of the variance in HSB, indicating a moderately strong fit. Key assumptions such as linearity and normality were considered, though limitations like multicollinearity and omitted variable bias were acknowledged.

Ethical considerations were central to this article, beginning with informed consent where participants were fully briefed on the study's purpose, procedures, risks, and benefits before voluntarily agreeing to participate. Confidentiality and privacy were rigorously maintained by securely storing data and anonymising participant information to protect sensitive health details. Participants were assured of their right to withdraw at any time without consequence, reinforcing autonomy and trust. Efforts were made to minimise harm by avoiding intrusive questions and allowing participants to skip uncomfortable items. Cultural sensitivity was prioritised by tailoring data collection tools to local norms, recognizing the role of traditional medicine in Buea. Equity and justice guided participant selection, ensuring a representative and diverse sample without exploiting vulnerable groups. Ethical approval was obtained from the University of Buea's Faculty of Health Sciences Ethical Review Board, as well as from the Delegation of Public Health and Department of Sociology and Anthropology, ensuring adherence to ethical standards.

## PRESENTATION OF FINDINGS

This section presents the findings of the study aimed at examining the influence of demographic characteristics, socio-economic status, and knowledge of typhoid fever transmission on health-seeking behavior (HSB) among residents of Buea Subdivision exhibiting symptoms of typhoid fever. The presentation is organized into two main tables. Table 1 displays the distribution of respondents by demographic and socio-economic variables, while Table 2 presents data on respondents' knowledge of typhoid transmission and related health-seeking practices. All data are expressed in frequencies, percentages, valid percentages and cumulative percentages to provide a comprehensive overview of patterns and trends within the study population. The results provide key insights into how individual characteristics and knowledge levels shape responses to typhoid fever and related symptoms.

**Table 2: Demographic and socio-economic factors influencing health seeking behaviour**

| | | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|---|
| **Age** | **Demographic variables** | | | | | |
| | 20-35 years | Young Adults | 103 | 68.7 | 68.7 | 68.7 |
| | 36-60 Years | Middle Age | 28 | 18.7 | 18.7 | 87.4 |
| | 61-70 | Aging | 12 | 8.0 | 8.0 | 95.4 |
| | ≥ 71 | Old | 7 | 4.6 | 4.6 | 100.0 |
| | **Total** | | **150** | **100.0** | **100.0** | |
| **Gender of Respondents** | Male | | 72 | 48.0 | 48.0 | 48.0 |
| | Female | | 78 | 52.0 | 52.0 | 100.0 |
| | **Total** | | **150** | **100.0** | **100.0** | |
| **Marital Status of Respondents** | Married | | 45 | 30.0 | 30.0 | 30.0 |
| | Single | | 78 | 52.0 | 52.0 | 82.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Separated | | 15 | **10.0** | **10.0** | 92.0 |
| | Divorced | | 12 | 8 | 8 | 100.0 |
| | **Total** | | **150** | **100.0** | **100.0** | |
| **Level of Education** | No formal education | | 63 | 42.0 | 44.1 | 44.1 |
| | Ordinary Level | | 38 | 25.3 | 26.6 | 70.6 |
| | Advanced Level | | 35 | 23.3 | 23.3 | 93.9 |
| | PhD Degree | | 14 | 9.3 | 9.8 | 100.0 |
| | **Total** | | **150** | **100.0** | 100.0 | |
| **Religion of Respondents** | Christianity | | 92 | 61.3 | 61.3 | 61.3 |
| | Islam | | 14 | 9.3 | 9.3 | 70.6 |
| | Traditional Beliefs | | 18 | 12 | 12 | 82.6 |
| | Others | | 26 | 17.3 | 17.3 | 100.0 |
| | **Total** | | **150** | **100.0** | 100.0 | |
| | **Socio-economic Variable** | | | | | |
| **Occupation** | Student | | 28 | 18.7 | 18.7 | 18.7 |
| | Teacher | | 54 | 36.0 | 36.0 | 54.7 |
| | Farmer | | 47 | 31.3 | 31.3 | 86.0 |
| | Driver | | 14 | 9.3 | 9.3 | 95.3 |
| | Others | | 7 | 4.7 | 4.7 | 100.0 |
| | **Total** | | **150** | **100.0** | **100.0** | |
| **Employment Status of Respondents** | Employed | | 16 | 10.6 | 10.6 | 10.6 |
| | Self-Employed | | 86 | 57.3 | 57.3 | 67.9 |
| | Unemployed | | 20 | 13.3 | 13.3 | 81.2 |
| | Student | | 28 | 18.6 | 18.6 | 100.0 |
| | **Total** | | **150** | **100.0** | **100.0** | |
| **Monthly Income Bracket of Respondent** | ≤ 200,000frs | | 43 | 28.7 | 28.7 | 28.7 |
| | 201,000 - 300,000 | | 37 | 24.7 | 24.7 | 53.3 |
| | 301,000 - 400,000 | | 28 | 18.7 | 18.7 | 72.0 |
| | 401,000 -500,000 | | 28 | 18.7 | 18.7 | 90.7 |
| | ≥ 500,000 | | 14 | 9.3 | 9.3 | 100.0 |
| | **Total** | | **150** | **100.0** | **100.0** | |
| **Household Size of Respondents** | 1-3 | Small size Family | 89 | 59.3 | 59.3 | 59.3 |
| | 4-6 | Average Size Family | 40 | 26.7 | 26.7 | 86 |
| | ≥ 7 | Large Family | 21 | 14.0 | 14.0 | 100.0 |
| | **Total** | | **150** | **100.0** | **100.0** | |
| **Health Insurance** | Insured | | 18 | 12 | 12 | 12 |
| | Not Insured | | 132 | 88 | 88 | 100 |
| | | | 150 | 100.0 | 100.0 | |
| **Respondents Distance to Health Facility** | Less than 1 Km | | 16 | 10.6 | 10.6 | 10.6 |
| | 1-1.5 Km | | 67 | 44.6 | 44.6 | 55.6 |
| | 2-3 km | | 49 | 32.6 | 32.6 | 87.8 |
| | Greater than 3Km | | 18 | 12 | 12 | 100.0 |
| | | | | | | |

Source: Field Survey, 2024



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Table 2 summarises the demographic and socio-economic characteristics of the 150 respondents who participated in the study. The age distribution indicates that young adults (20–35 years) constituted the majority of respondents, accounting for 68.7%, followed by the middle-aged group (36–60 years) at 18.7%. Individuals aged 61–70 years represented 8.0%, while those 71 years and above formed the smallest proportion at 4.6%. Gender distribution was relatively balanced, with 52.0% female and 48.0% male respondents. In terms of marital status, more than half were single (52.0%), while 30.0% were married and smaller proportions were separated (10.0%) or divorced (8.0%). Educational attainment varied, with 42.0% of respondents reporting no formal education. Among the valid responses (n = 143), 26.6% had attained ordinary-level education, 19.6% had completed advanced-level studies, and 9.8% possessed a PhD degree. Christianity was the dominant religion, practiced by 61.3% of respondents. Those adhering to Islam constituted 9.3%, while 12.0% identified with traditional beliefs and 17.3% belonged to other religious groups.

Regarding occupation, the largest proportion of respondents were teachers (36.0%), followed by farmers (31.3%). Students represented 18.7%, while drivers and other unspecified occupations accounted for 9.3% and 4.7%, respectively. Employment status further showed that 57.3% were self-employed, 13.3% unemployed, and 10.6% formally employed, while students made up 18.6% of the sample. Monthly income levels varied considerably across households. Approximately 28.7% earned ≤ 200,000 FRS, while 24.7% earned between 201,000 and 300,000 FRS. Income categories of 301,000–400,000 FRS and 401,000–500,000 FRS each accounted for 18.7%, whereas only 9.3% reported monthly earnings of 500,000 FRS or more. Household size analysis revealed that small households (1–3 members) were the most common, representing 59.3% of respondents. Average-sized households (4–6 members) accounted for 26.7%, while 14.0% belonged to large households (≥7 members). Health insurance coverage was notably low, with 88.0% of respondents lacking any form of insurance. Accessibility to health facilities varied, with 44.6% residing 1–1.5 km from the nearest health centre. Additionally, 32.6% lived 2–3 km away, 12.0% were located more than 3 km away, and only 10.6% lived within 1 km of a facility.

Overall, the demographic and socio-economic profile suggests a predominantly young, self-employed, low-income population with limited educational attainment, large household sizes, and minimal health insurance coverage, factors that are likely to influence health-seeking behaviour in the study area.

The second objective aimed at assessing the knowledge of the respondents on typhoid fever transmission. The results are shown below in Table 3.

**Table 3: Knowledge of typhoid fever transmission**

| Indicator | Response | Number | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| **Knowledge of modes of transmission of typhoid fever** | Contaminated water | 54 | 36.0 | 36.0 | 36.0 |
| | Airborne droplets | 14 | 9.3 | 9.3 | 45.3 |
| | Contaminated food | 56 | 37.3 | 37.3 | 82.6 |
| | Physical Contact | 6 | 4 | 4 | 86.6 |
| | Mosquito bites | 20 | 13.3 | 13.3 | 100 |
| | **Total** | **150** | **100.0** | **100.0** | |

| | | | | | |
|---|---|---|---|---|---|
| **Confidence in knowledge of typhoid fever transmission** | Not at all | **08** | **5.3** | **5.3** | **5.3** |
| | Slightly confident | 13 | 8.6 | 8.6 | 13.9 |
| | Moderately confident | 62 | 41.3 | 41.3 | 55.2 |
| | Very confident | 32 | 21.3 | 21.3 | 76.5 |
| | Extremely confident | 35 | 23.3 | 23.3 | 100 |
| | **Total** | **150** | **100.0** | **100.0** | |
| **Level of agreement (on a scale of 1–5) that boiling drinking water is an effective method of preventing typhoid fever** | Strongly Agree | 139 | 92.6 | 92.6 | 96.2 |
| | Strongly Disagree | 11 | 7.3 | 7.3 | 100 |
| | **Total** | **150** | **100.0** | **100.0** | |
| **The first point of care individuals choose when they or a family member experience prolonged fever or diarrhea** | Health center/Hospital | 42 | 28 | 28 | 28 |
| | Traditional Healer | 12 | 8 | 8 | 36 |
| | Buy medicine from Pharmacy | 88 | 58.6 | 58.6 | 94.6 |
| | Do nothing | 6 | 4 | 4 | 98.6 |
| | Other | 2 | 1.3 | 1.3 | 100 |
| | **Total** | **150** | **100.0** | **100.0** | |
| **Timeliness of seeking medical care in the event of symptoms consistent with typhoid fever.** | Immediately (within 1 day) | 39 | 26 | 26 | 26 |
| | Within 2-3 days | 27 | 18 | 18 | 44 |
| | After 3 days | 29 | 19.3 | 19.3 | 63.3 |
| | Only if symptoms worsen | 55 | 36.6 | 36.6 | 100 |
| | **Total** | **150** | **100.0** | **100.0** | |
| **Extent to which individuals adhere to a full course of prescribed medications during treatment for typhoid fever symptoms.** | Always | 24 | 16 | 16 | 16 |
| | Sometimes | 36 | 24 | 24 | 40 |
| | Rarely | 49 | 32.6 | 32.6 | 72.6 |
| | Never | 41 | 27.3 | 27.3 | 100 |
| | **Total** | **150** | **100.0** | **100.0** | |
| **Common features of typhoid fever typically experienced by individuals** | Fever | 42 | 28.0 | 28.0 | 28.0 |
| | Abdominal Pain | 38 | 25.3 | 25.3 | 53.3 |
| | Headache | 12 | 8.0 | 8.0 | 61.3 |
| | Fatigue | 21 | 14.0 | 14.0 | 75.3 |
| | Vomiting | 23 | 15.3 | 15.3 | 90.7 |
| | Constipation | 14 | 9.3 | 9.3 | 100.0 |
| | **Total** | **150** | **100.0** | **100.0** | |
| **Methods adopted by individuals to prevent typhoid fever** | Boiling water before drinking | 49 | 32.7 | 32.7 | 32.7 |
| | Washing hands regularly with soap | 38 | 25.3 | 25.3 | 58.0 |
| | Eating properly cooked food | 28 | 18.7 | 18.7 | 76.7 |


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| | | | | | |
|---|---|---|---|---|---|
| | Avoiding contact with infected persons | 35 | 23.3 | 23.3 | 100.0 |
| | Total | **150** | **100.0** | **100.0** | |

Source: Field Survey, 2024

Table 3 presents respondents' knowledge of typhoid fever transmission, their confidence levels, and related health-seeking and preventive behaviors. Contaminated food (37.3%) and contaminated water (36.0%) were the most widely recognized transmission routes, although misconceptions persisted, with 13.3% attributing typhoid to mosquito bites and 9.3% to airborne droplets. Confidence in knowledge varied, with the largest proportion (41.3%) reporting moderate confidence, while 23.3% felt extremely confident. A high level of awareness was evident regarding prevention, as 92.6% strongly agreed that boiling drinking water is effective. When faced with prolonged fever or diarrhea, most respondents (58.6%) indicated they would first visit a pharmacy, whereas only 28.0% preferred a health facility. Timeliness in seeking care was suboptimal: just 26.0% would seek immediate medical attention, and 36.6% would delay until symptoms worsened. Medication adherence was similarly poor, with only 16.0% always completing prescribed treatments, while the majority reported sometimes, rarely, or never adhering fully.

Commonly experienced symptoms of typhoid fever included fever (28.0%), abdominal pain (25.3%), vomiting (15.3%), fatigue (14.0%), constipation (9.3%), and headache (8.0%). With respect to preventive practices, boiling water before drinking was the most commonly adopted method (32.7%) followed by hand washing with soap (25.3%), avoiding contact with infected individuals (23.3%), and eating properly cooked food (18.7%). Overall, while respondents demonstrated substantial knowledge of major transmission routes and effective prevention strategies, the persistence of misconceptions, delayed care-seeking behavior, and low adherence to medication highlight critical gaps that may hinder effective typhoid fever control within the population.

The outcomes of the multiple linear regression analysis used to explore the factors shaping health-seeking behaviour among individuals diagnosed with typhoid fever are summarized in Table 4.

**Table 4: Regression results**

| **Coefficients** | | | | | |
|---|---|---|---|---|---|
| **Model** | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** |
| | **B** | **Std. Error** | **Beta** | | |
| Constant Term | .801 | .138 | | 5.784 | .000 |
| Knowledge of Typhoid Fever Transmission | .012 | .036 | .043 | .343 | .732 |
| Quality of Services | .166 | .060 | .330 | 2.772 | .006 |
| Demographic | .064 | .021 | .234 | 3.032 | .003 |
| Cultural Belief | .039 | .041 | .086 | .971 | .333 |

Source: Field Survey, 2024

The model assessed the influence of four predictor variables: knowledge of typhoid transmission, quality of healthcare services, demographic characteristics, and cultural beliefs.

Although the coefficient for knowledge of typhoid transmission (B = 0.012) suggests a slight upward trend in health-seeking behaviour with increased awareness, the lack of statistical significance (p = 0.732) indicates that this pattern is unlikely to reflect a meaningful effect within the study group. As a result, the evidence does not support the conclusion that knowledge levels substantially determine whether patients seek appropriate medical care for typhoid fever.

An examination of the regression outputs reveals that the quality of healthcare services plays a decisive role in shaping health-seeking behaviour, with a significant positive coefficient (B = 0.166, p = 0.006). This indicates that better service delivery and improved patient experiences substantially enhance the likelihood that individuals will pursue timely treatment for typhoid fever. Demographic characteristics also emerge as an important driver of health-seeking patterns (B = 0.064, p = 0.003), implying that variations in age, sex, and household structure influence how people engage with healthcare systems. Conversely, cultural beliefs demonstrate a positive but non-significant effect (B = 0.039, p = 0.333), suggesting that while cultural norms may shape attitudes toward seeking care; their overall contribution is limited in this model. The statistically significant constant term (B = 0.801, p < 0.001) further indicates that additional unmeasured factors contribute to patient behaviour beyond those explicitly examined. Taken together, the findings identify service quality and demographic composition as the most influential determinants of health-seeking behaviour among typhoid fever patients. These results point to the need for strategic public health actions that strengthen healthcare delivery systems and address demographic-specific barriers to care, while recognizing that cultural influences, although not statistically significant here, may still affect health decisions in certain contexts. This article formulated two alternative hypotheses to guide the empirical validation of the research model, namely:

- $H_1$: demographic and socio-economic factors have an effect on patients' health-seeking behavior in the Buea Health District.
- $H_2$: Knowledge of typhoid fever transmission has an effect on patients' health-seeking behavior in the Buea Health District.

Multiple linear regression analysis was employed to test these hypotheses, with statistical significance assessed at the 5% level ($p < 0.05$). Regarding $H_1$**,** the analysis reveals that the socio-*demographic variables,* particularly *age,* have a *p*-value of 0.003, which is below the 0.05 threshold. This demonstrates a statistically significant relationship between demographic characteristics and health-seeking behavior. In contrast, *socio-economic factors* show a *p*-value of 0.355, indicating a positive but statistically insignificant relationship with health-seeking behavior. Consequently, while socio-economic factors alone may not strongly predict patients' healthcare decisions, demographic characteristics play a decisive role. Based on these findings, $H_1$ is partially accepted namely that, demographic variables affect health-seeking behavior, whereas socio-economic factors do not exhibit a statistically significant effect within this study's context.

For $H_2$**,** the regression results show that *knowledge of typhoid fever transmission* has a *p*-value of 0.732, which exceeds the 0.05 significance threshold. This indicates that knowledge of disease transmission does not exert a statistically significant influence on patients' health-seeking behavior. Therefore, $H_2$ is rejected, suggesting that variations in patients' awareness of typhoid fever transmission are not a major determinant of their healthcare utilisation patterns


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in Buea Health District. To summarise, the hypothesis testing results suggest that demographic characteristics are key predictors of health-seeking behavior among typhoid fever patients in the Buea Health District, whereas knowledge of disease transmission and socio-economic conditions appear to have limited influence.

## DISCUSSION OF FINDINGS

The regression analysis revealed that demographic characteristics had a statistically significant positive effect on health-seeking behavior ($p$ = 0.003), confirming that attributes such as age, gender and household composition significantly influence healthcare decisions. Younger individuals and females were more likely to seek formal medical care compared to older adults, a pattern consistent with studies in similar sub-Saharan African contexts (Bwire et al., 2021; Tchuem Tchuenté et al., 2020). This finding suggests that demographic dynamics, particularly generational differences in health awareness and gender roles-remain central to understanding healthcare utilisation for infectious diseases such as typhoid fever.

On the other hand, socio-economic factors showed a positive but statistically insignificant effect on health-seeking behavior contrasts with numerous studies identifying socio-economic status as a consistent predictor of healthcare utilisation (Bwire et al., 2021; Ambebila et al., 2020; Yakum et al., 2017). While higher income and education have been shown to facilitate early symptom recognition and prompt care-seeking, especially in Uganda and other African settings, the present result suggests that financial capacity alone does not ensure timely access to formal healthcare. This aligns with evidence from Omondi et al. (2019) and Ndiaye et al. (2020), who found that socio-economic advantages are frequently undermined by barriers such as long distances to health facilities, transportation challenges, and mistrust of formal services. Cultural norms may further restrain care-seeking despite adequate economic means, echoing observations by Tchouaket et al. (2021) that traditional beliefs often overshadow financial capability. These patterns resonate with Morgan et al. (2013), who argue that affordability interacts with symptom interpretation and service quality rather than functioning independently.

The effect of knowledge of typhoid fever transmission on health-seeking behaviour was found to be statistically insignificant (p = 0.732), despite respondents demonstrating strong awareness of causes and prevention. Although many recognized the risks of untreated water (75.3%) and endorsed boiling water as protective (92.6%), a substantial proportion still relied on self-medication (58.6%) or delayed formal care until symptoms worsened (36.6%). Through the lens of Donabedian's Theory of Healthcare Quality, this gap between knowledge and action reflects limitations in healthcare structures and processes, such as inadequate infrastructure, inconsistent diagnostic practices, and weak provider-patient communication that undermine trust in formal services. Consequently, the findings suggest that knowledge alone is insufficient to drive timely care-seeking unless supported by reliable, accessible, and high-quality healthcare systems capable of converting awareness into appropriate behavioral outcomes. This is the case with quality of healthcare services as a key predictor of health-seeking behavior ($p$ = 0.006). Respondents who perceived healthcare services as accessible, responsive, and of high quality were significantly more likely to seek professional care. This finding reinforces the argument that structural and experiential factors, such as provider attitude, waiting time, and treatment effectiveness, shape patients' willingness to engage with the formal health system. It aligns with prior research that points to the fact that perceived service quality and patient

satisfaction often outweigh knowledge-based or socio-economic considerations in determining care-seeking decisions (Msemo et al., 2016; Hanson et al., 2015)

Conversely, cultural beliefs showed a weak and statistically insignificant association with health-seeking behavior ($p = 0.333$). Although respondents generally recognised biomedical explanations for typhoid transmission, the continued use of traditional healers (8.0%) and reliance on pharmacies for self-medication indicate that cultural practices persist when individuals perceive limitations in the formal healthcare system. Interpreted through Donabedian's Theory of Healthcare Quality**,** these patterns suggest that structural and process-related deficiencies, such as limited facility readiness, inconsistent diagnostic procedures, and suboptimal provider-patient communication, may reduce public confidence and encourage alternative care pathways. Thus, while cultural orientation alone may not directly determine health-seeking behavior, it interacts with perceptions of healthcare quality, prior experiences, and accessibility, shaping how individuals navigate between traditional remedies and formal medical services.

Overall, the model accounts for approximately 45.3% ($R^2 = 0.453$) of the variation in health-seeking behavior, indicating that nearly half of the differences among respondents are explained by demographic, socio-economic, cultural, and perceptual factors. The remaining variation likely reflects unmeasured influences such as psychological attitudes, social networks, or systemic barriers. Interpreted through Donabedian's Theory of Healthcare Quality, these results highlight that demographic characteristics and the quality of healthcare services, both structural and process-related components, are the most significant determinants of timely and appropriate care-seeking among typhoid fever patients in the Buea Health District. While knowledge and income are important, they alone are insufficient to change behavior without adequate facility readiness, efficient service processes, and trust in providers. Consequently, interventions should extend beyond health education to address structural gaps, enhance service delivery, and foster culturally sensitive, trust-based interactions between healthcare systems and the community. This perspective underscores the necessity of integrating systemic improvements with demographic- and culture-informed strategies to reduce delays in care-seeking and improve health outcomes in typhoid-endemic settings like Buea.

## CONCLUSION

This study concludes that health-seeking behavior in Buea Health District is multifactorial and contextually determined, shaped by the interaction of demographic characteristics, perceived healthcare quality, cultural beliefs, and socio-economic factors. Although most residents demonstrated knowledge of typhoid fever transmission and prevention, this awareness did not consistently translate into timely formal care. Construed through Donabedian's Theory of Healthcare Quality, these findings indicate that structural and process dimensions of healthcare, such as facility readiness, service accessibility, provider competence, and trustworthiness, are stronger predictors of care-seeking behavior than knowledge alone. Demographic factors and perceptions of healthcare quality emerged as the most actionable determinants: younger individuals and females were more likely to seek formal care, while older adults and males were less likely. Respondents who perceived healthcare facilities as responsive, effective, and respectful were significantly more likely to utilise formal services, whereas socio-economic status and cultural beliefs, though relevant, had weaker predictive


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power. These results underscore the need for a systems-oriented, culturally informed approach that strengthens healthcare structures and processes, builds community trust, and integrates local norms alongside biomedical education to improve timely and appropriate health-seeking behavior.

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