



ENHANCING PATIENT BONDING TO IMPROVE MALARIA TREATMENT EXPERIENCES IN SUSTAINABLE HEALTHCARE SYSTEMS OF EMERGING ECONOMIES

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ABSTRACT

Purpose: The purpose of this study is to examine patients' perspectives on bonding dimensions and their role in facilitating healthcare delivery within a university clinic in Ghana. Specifically, it explores how patient bonding enhances healthcare experiences during the malaria treatment journey.

Design/Methodology/Approach: A qualitative research design was adopted, employing a semi-structured interview guide to elicit in-depth insights from participants. Data were collected from 25 patients who had had malaria in the last year, and the saturation point occurred when the 25 patients were interviewed at a university clinic in Ghana and analysed thematically.

Research Limitation: The research relies on qualitative data gathered from a limited sample of patients in a university. This constraint may limit the generalisability of the findings to service sectors where different cultural, economic, or operational factors may influence service delivery dynamics.

Findings: Four main themes emerged: Quality treatment process, Service package, Word-of-Mouth communication, and Service encounter confidentiality. Nine sub-themes emerged, highlighting how bonding dimensions shape patients' treatment experiences. The findings indicate that strong relational bonding between patients and providers influences treatment experiences and supports sustainable healthcare delivery in emerging economies such as Ghana.

Practical Implication: The study reinforces the World Health Organisation's Test, Treat, and Track strategy by demonstrating that instrumental support, such as streamlined service delivery, effectively reduces structural barriers to adherence to malaria treatment.

Social Implication: Policies should move beyond a narrow biomedical focus to encompass the social and interpersonal factors that shape treatment adherence and health-seeking behaviour.

Originality/Value: The study identifies several novel variables that extend Social Support Theory and Patient-Centred Care, including quality treatment, comprehensive service packages, word-of-mouth communication, and service encounter confidentiality. These variables introduce structural, relational, and community-based dimensions that enhance patient-provider bonding and treatment adherence in malaria care contexts.

Keywords: *Healthcare. malaria treatment. patient bonding. patient-centred care. sustainability*



INTRODUCTION

Malaria remains one of the most pressing health concerns in the world. The World Health Organisation (WHO) reports approximately 229 million cases and 409,000 deaths worldwide in 2019 (WHO, 2020). While malaria diagnoses are rising in some Western countries, including the United States (Mace et al., 2021), the disease burden is excessively concentrated in Africa. WHO (2020) posits that Sub-Saharan Africa, Southeast Asia, and the Western Pacific are the most severely affected regions, with sub-Saharan Africa alone accounting for nearly 95% of global malaria cases and deaths (Alum et al., 2025). Despite significant progress in preventive strategies, the disease continues to exert a heavy toll in endemic regions (Dhiman, 2019).

Malaria is a leading cause of morbidity, responsible for about 40% of outpatient visits in Ghana (Adum et al., 2023). Although treatment adherence remains a persistent challenge, many patients fail to complete prescribed courses (Kardas, 2024). Although the importance of adherence has been widely emphasised, the relational dynamic between healthcare providers and patients remains understudied. Evidence from chronic disease management indicates that strong provider–patient relationships improve adherence and treatment outcomes (Sylvester et al., 2018; Eton et al., 2017). Yet the potential role of such “patient bonding” in acute illnesses like malaria has received limited scholarly attention.

Existing malaria interventions largely emphasise biomedical and technological innovations such as novel antimalarial drugs, rapid diagnostic tools, and insecticide-treated nets (Abdul Rahim et al., 2025; Mao et al., 2023; Winskill et al., 2019). While these innovations are essential, they often overlook human-centred factors such as communication, trust-building, and patient–provider rapport (Wolf et al., 2021). A recent study highlights the relevance of patient-centred care in malaria management (Agyapong et al., 2025).

However, few have systematically examined how specific bonding mechanisms contribute to sustainable health delivery systems in malaria-endemic regions. Even though there is growing recognition of patient engagement in malaria treatment, the literature remains heavily skewed toward biomedical approaches, leaving limited empirical evidence on how patient bonding influences adherence, treatment outcomes, and the sustainability of health systems in emerging economies. This study seeks to address this gap by exploring the role of patient–provider bonding in enhancing malaria treatment experiences and strengthening sustainable healthcare delivery.

This study makes a threefold contribution to the existing literature. First, from a theoretical perspective, the study provides insight into how relational aspects of care, such as communication



quality, confidentiality, and trust, significantly facilitate the completion of malaria treatment. These factors have historically been overlooked in sub-Saharan Africa, where biomedical priorities are often emphasised as the primary determinants of treatment success (Pucca et al., 2024). Second, the study advances research on bonding dimensions, a theme that has received limited scholarly attention in professional services such as healthcare (Krolikowska-Adamczyk & Kuenzel, 2024). By illustrating how specific bonding behaviours, including the quality of service delivery, contribute to patient adherence in African healthcare settings, this research expands the conceptual scope of patient-provider dynamics. Third, from a policy perspective, the findings support progress toward Sustainable Development Goal (SDG) 3, which seeks to ensure healthy lives and promote well-being by strengthening sustainable health delivery systems.

The study is outlined as follows. The first section introduces the study. The next section continues with the research background. This is followed by the study's methodology. The next section focuses on the study's findings and discussion. The final section concentrates on theoretical implications, implications for practice, and directions for future research.

THEORETICAL FRAMEWORK: SOCIAL SUPPORT AND PATIENT-CENTRED CARE

This study is grounded in two interrelated theoretical frameworks: Social Support Theory (House, 1987) and Patient-Centred Care (Stewart et al., 2011). Together, these frameworks provide a conceptual basis for understanding how emotional, informational, and instrumental support, combined with respect for patient autonomy, can enhance adherence to malaria treatment and improve health outcomes. Social Support Theory posits that patients experience better health outcomes when they receive various forms of psychosocial support. Emotional support, such as empathy and reassurance, has been shown to reduce treatment-related anxiety. For example, Nkrumah et al. (2024) confirmed that healthcare providers were more likely to complete their prescribed malaria treatment regimen. Similarly, informational support, such as clear, comprehensible health education, improves patient understanding and compliance (Wittink & Oosterhaven, 2018).

In parallel, the Patient-Centred Care underscores the importance of patient dignity, collaborative decision-making, and equitable access to care. Patients who perceived their privacy to be protected remain loyal to their healthcare providers (Kirimlioglu, 2017). Thus, malaria response is most effective when social support mechanisms are integrated with the patient-centred care notion, addressing both the human and systemic dimensions of treatment adherence and health system performance. While Social Support Theory and Patient-Centred Care provide important insights into health outcomes, existing research has largely treated them independently, with limited



integration explaining their combined influence on treatment adherence. Moreover, their application remains focused on chronic conditions in well-resourced settings, with insufficient attention to acute diseases such as malaria and to structural healthcare factors, including treatment quality. In addition, the underlying mechanisms, particularly patient–provider bonding and trust, remain underexplored.

Bonding

Bonding is a close economic, psychological, emotional, and/or physiological attachment of members within an associative and collaborative relationship (Kišjuhas, 2024). Patient bonding is the development of trust, rapport, and mutual understanding between healthcare providers and patients to improve health outcomes across diverse medical settings (Street & Smith, 2021; Cantor & Thorpe, 2018). Thus, the patient bonding journey is a process by which patients feel empowered to actively engage in their healthcare encounters (Bhati et al., 2023; Rathert et al., 2022; Sousa & Alves, 2019).

In malaria-endemic regions, for instance, strong provider–patient relationships have been associated with increased adherence to treatment (Drossman & Ruddy, 2020). The bonding process impacts communication, marketing, and healthcare management (Chang et al., 2021). In this case, understanding patients' emotional and psychological needs strengthens bonds (Bradshaw et al., 2022).

Bonding Dimensions

Quality Treatment Process in the Malaria Treatment Journey

The quality of the treatment process plays a pivotal role in shaping patient experiences and outcomes within the malaria treatment continuum (Ndambo et al., 2025). Efficiency and perceived clinical competence are core dimensions that influence adherence and trust in healthcare services (Robinson, 2016). Timely and efficient service delivery, particularly reduced wait times, has been consistently associated with improved patient adherence to treatment (Lewis et al., 2018). For example, clinics with shorter waiting periods report higher treatment attendance, underscoring the importance of streamlining service delivery to enhance treatment outcomes (Nkrumah et al., 2024; Lewis et al., 2018). Perceived competence of healthcare providers significantly affects patient trust and satisfaction (Hong & Oh, 2020). Confidence in diagnostic accuracy and treatment efficacy fosters patient confidence (Faiyazuddin et al., 2025). Overall, high-quality treatment processes that integrate efficient service delivery, consistent follow-up, and demonstrated clinical competence are essential for improving adherence to and outcomes of malaria treatment (Ampomah et al., 2025).



Service Package in the Malaria Treatment Journey

Service packaging is the process of designing and presenting a service to enhance its perceived value, usability, and customer appeal (Kirillova & Chan, 2018). In the healthcare sector, malaria treatment packages include diagnostic tests, antimalarial medications, follow-up reminders, patient education on prevention, and a hotline for queries (Al-Worafi, 2024; Bruxvoort et al., 2014). Access to a comprehensive and integrated service package is crucial for ensuring timely diagnosis and effective treatment adherence (Al-Worafi, 2023).

The World Health Organisation's (2024) "Test, Treat, and Track" strategy underscores the importance of on-site diagnostic capacity and the immediate availability of treatment to reduce delays and prevent loss to follow-up (Lopes et al., 2020). In addition to the physical availability of services, the organisational aspects of the service package, such as streamlined service delivery and coordination among healthcare providers, play a vital role in patient satisfaction (Bhati et al., 2023). Research highlights that when diagnostic and treatment services within the same facility are accessible during a single visit, it makes the malaria treatment convenient for patients to complete the treatment journey (Bonciani et al., 2018; Nkrumah et al., 2024). Thus, designing patient-centric solutions must integrate clinical services with supplementary support (Gohar et al., 2022).

Word-of-Mouth Communication in the Malaria Treatment Journey

Taheri et al. (2021) highlight the connection between healthcare quality and patients' WOM communication, which, in turn, influences hospital revisits and the number of new patients referred. This form of interpersonal communication involves the exchange of health-related information, reassurance, and experiential narratives among patients, community members, and healthcare providers (O'Toole, 2024).

Studies have demonstrated that favourable word-of-mouth messages, particularly those emphasising provider empathy, treatment effectiveness, and accessibility, can significantly enhance patient engagement (Pauli et al., 2023). This mode of communication helps alleviate treatment-related anxieties, with reassurance from providers reducing fear and uncertainty, which are known barriers to adherence (Nkrumah et al., 2024), thus ensuring high-quality healthcare delivery, characterised by tangibles, empathy, and responsiveness (Chen et al., 2024). Negative word-of-mouth, such as reports of poor service quality or treatment side effects, can equally hinder adherence, highlighting the dual-edged nature of this communication channel (Kara & Tugrul, 2024; He et al., 2024). Therefore, understanding and harnessing word-of-mouth communication is essential for designing patient-centred interventions that foster trust, knowledge dissemination, and sustained engagement in malaria treatment.



Service Encounter Confidentiality in the Malaria Treatment Journey

The World Health Organisation's malaria control guidelines increasingly recognise confidentiality as integral to patient-centred care, advocating for healthcare settings that respect privacy to improve health outcomes (WHO, 2024). Confidentiality during healthcare service encounters is critical (Chung et al., 2024) and influences patient trust and satisfaction (Alhammad et al., 2024). Maintaining privacy and protecting sensitive health information during consultations fosters an environment where patients feel safe to disclose symptoms and concerns, which is essential for accurate diagnosis and effective treatment planning (Turkstani et al., 2025; Rashid & Sharma, 2025).

Perceived risk to confidentiality can deter patients from seeking timely care or completing treatment regimens (Kisekka & Giboney, 2018). Thus, respecting privacy during malaria consultations is a key factor in clinic loyalty and continued engagement with the healthcare providers (Bennett et al., 2017). However, confidentiality concerns are particularly salient in settings where consultations occur in overcrowded or poorly designed facilities that compromise private communication (Zibrowski et al., 2019). These limitations undermine patients' confidence in the healthcare environment and can lead to reduced disclosure, misdiagnosis, or incomplete adherence to treatment. In sum, service encounter confidentiality is a foundational element that supports healing relationships, mitigates barriers to care, and promotes sustained adherence in the malaria treatment journey.

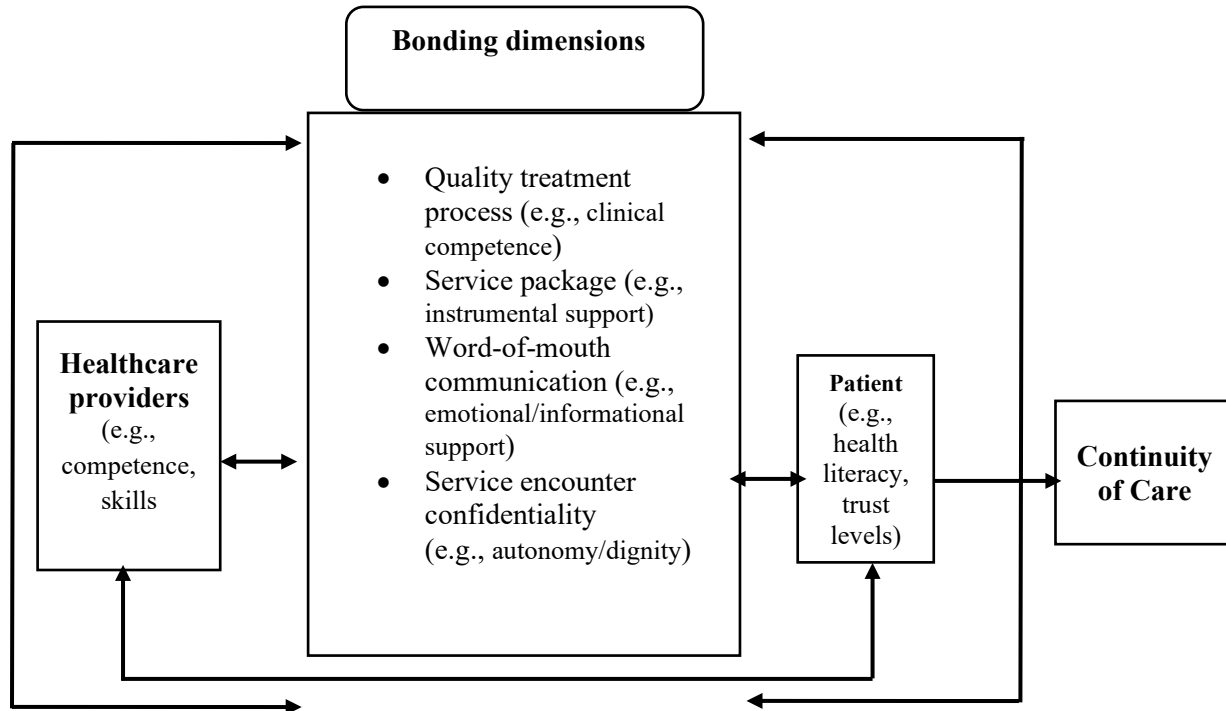


Figure 1: Conceptual Framework: Malaria-Specific Patient Bonding Framework (MSPBF)

This study investigates patients' perspectives on the dimensions of bonding that can be effectively integrated into the malaria treatment journey to enhance patient experiences and promote continuity of care. This framework clarifies how relationships between healthcare providers and patients contribute to improved malaria treatment outcomes, particularly in resource-limited settings (see Figure 1). Grounded in Social Support Theory (House, 1987) and Patient-Centred Care (Stewart et al., 2011), the framework identifies three core components that collectively enhance patient engagement and treatment adherence.

The framework begins with the healthcare provider, whose clinical competence (e.g., accurate diagnosis) and interpersonal skills (e.g., empathy) form the foundation for provider–patient bonding, thereby improving treatment adherence and effectiveness of bonding efforts (Fan et al., 2014).

Within the framework's bonding dimensions, four theorised mechanisms, supported by patient narratives, are identified as instrumental in building effective healing relationships. These include



the quality of the treatment process (clinical competence), which entails the delivery of efficient, accurate care, fostering trust in provider expertise and system reliability. Service package (instrumental support), on the other hand, includes on-site diagnosis and immediate access to medication, addressing patients' tangible healthcare needs. Word-of-mouth communication (emotional/informational support) emphasises empathetic dialogue, which reduces patient anxiety, encourages treatment compliance, and protects service confidentiality (autonomy). It focuses on safeguarding patient privacy, which is essential for fostering trust and addressing concerns about stigma and sensitive health disclosures, as depicted in Figure 1. These elements collectively facilitate continuity of care throughout the malaria treatment process. The MSPBF serves not only as a theoretical lens for understanding bonding in acute malaria care but also as a practical analytical tool for guiding data collection and analysis in this study.

METHODOLOGY

Research Design

Gaining in-depth insights into patients' malaria treatment in the healthcare setting is important. A qualitative study was conducted using semi-structured interviews with patients at a university clinic in Ghana to explore patients' experiences during face-to-face interactions with healthcare providers (Doctors, Nurses, Pharmacists, etc.) in the malaria treatment process. The objective was to explore patients' perspectives on bonding dimensions to assess continuity of care at the clinic during the malaria treatment journeys.

Data Collection

The fieldwork took place at the university campus in Kumasi, Ghana. An interview guide was used to collect data from patients of the clinic (Zainal et al., 2024). The clinic was chosen for the study because its typical patients are university staff who receive malaria treatment there, and their in-depth lived experiences were paramount (Greenfield & Jensen, 2010). The interview guide consisted of general information. Additionally, the study examined bonding dimensions in repeated service encounters in healthcare. The range of informants captured enabled an understanding of patients' perspectives on bonding dimensions in repeated service encounters at the healthcare provider's clinic. This service encounter process captures the direct interaction between patients and healthcare providers (Bitner et al., 1990).

In this context, accessible healthcare services must be the foundation for developing innovative healthcare encounters and delivery models for effective healthcare delivery (Anderson et al., 2018). In all, 25 interviews were conducted at respondents' offices, and the interviews were conversational, semi-structured, and voluntary (McIlveen et al., 2003). Participants were fully informed about the research objectives and procedures before data collection began. Participants



were assured of their right to withdraw from the study at any time. Information confidentiality was adhered to protect participants' psychological well-being and dignity (Smoyer et al., 2014; Willig, 2001). The interview was conducted in English, the official language of instruction and communication at the university. Interviews continued until data saturation was achieved, which occurred after 25 interviews (Guest et al., 2020; Francis et al., 2010).

Data Analysis

The interviews were recorded, with the participants' permission (VandeVusse, 2022). During the data analysis phase, the voice-recorded interviews were transcribed verbatim in Microsoft Word. Prior to commencing data analysis, all transcriptions were anonymised and returned to participants for verification of factual accuracy. This approach ensured the development of a concise, coherent, and logically structured narrative, supported by interview excerpts that captured patients' perspectives on repeated service encounters (Braun & Clarke, 2006). Once transcription was complete, the data were analysed using the framework developed by Miles and Huberman (1994), widely regarded as a robust method for qualitative data analysis. This framework comprises three interrelated processes: data reduction, data display, and conclusion drawing/verification.

Data reduction involves condensing vast amounts of raw information into manageable units by coding and categorising transcripts (Bingham, 2023). This process aimed to identify key patterns, themes, and recurring ideas while eliminating redundant or extraneous details, and it helped define and name themes (Mezmir, 2020). Table 2 outlines the individual themes and subsequent quotes in relation to the interview transcripts.

Data display involved organising the coded data to facilitate interpretation and enable a clearer understanding of the relationships between themes and concepts. These provided a comprehensive overview of the data, allowing for systematic comparisons and deeper insights into the phenomena under study (Battle & Heer, 2019). Before finalising the research summary, an independent researcher carefully compared the coding results to ensure data consistency.

Finally, conclusion drawing and verification entailed synthesising the findings into coherent interpretations while continually revisiting the data to ensure that the conclusions were credible, consistent, and grounded in evidence (Skjott Linneberg & Korsgaard, 2019). This further ensured a rigorous and transparent approach to qualitative data analysis. This method facilitated the identification of meaningful insights, providing a rich understanding of the participants' experiences and perspectives within the context of this research.



Table 1: Demographic Characteristics of Participants

Participants	Role at work	Years of working experience	Sex	Age range	Education	Duration of interview
P 1	Teaching staff	7	Male	55-59	PhD	45 minutes
P2	Teaching staff	13	Female	45-49	PhD	48 minutes
P3	Teaching staff	13	Female	45-49	Masters	45 minutes
P4	Teaching staff	13	Male	45-49	Masters	46 minutes
P 5	Teaching staff	12	Female	40-44	Masters	46 minutes
P 6	Non-teaching staff	13	Male	55-59	PhD	60 minutes
P7	Non-teaching staff	4	Male	35-39	Degree	48 minutes
P8	Teaching staff	18	Female	45-49	Masters	55 minutes
P9	Non-teaching staff	5	Male	30-34	Degree	46 minutes
P10	Teaching staff	21	Male	45-49	Masters	60 minutes
P11	Non-teaching staff	19	Male	45-49	Masters	54 minutes
P12	Non-teaching staff	17	Male	45-49	Masters	57 minutes
P33	Teaching staff	8	Female	35-39	Masters	55 minutes
P14	Non-teaching staff	29	Male	55-59	Masters	48 minutes
P15	Teaching staff	19	Male	50-54	Masters	49 minutes
P16	Non-teaching staff	20	Male	35-39	Degree	45 minutes
P17	Non-teaching staff	8	Male	35-39	Masters	40 minutes
P18	Non-teaching staff	27	Male	50-54	Masters	60 minutes
P19	Non-teaching staff	19	Male	45-49	Masters	58 minutes
P20	Non-teaching staff	17	Male	40-44	Masters	59 minutes
P21	Non-teaching staff	18	Male	50-54	Masters	58 minutes
P22	Non-teaching staff	6	Male	40-45	Degree	45 minutes
P23	Non-teaching staff	8	Male	40-45	Masters	58 minutes
P24	Non-teaching staff	13	Male	45-49	Masters	55 minutes
P25	Non-teaching staff	16	Female	30-39	Masters	49 minutes

At the conclusion phase of theory-building research, newly emerging concepts and propositions are evaluated against the existing literature to refine and strengthen the developed theory (Paul et al., 2024). Data were presented as vivid quotations from participants/patients (Miles & Huberman, 1994) and are shown in Table 2.

In this study, the university staff who have had malaria treatment at the clinic in Ghana in the last twelve months were involved in the study. University staff were the main target of the study due to personalised health experiences. In total, 25 participants who had malaria before underwent the subsequent treatment process making their insights and perspectives valuable to the study. The



participants highlighted evidence-based information that revealed practical issues in accessing treatment for malaria. Of these, 19 were males, and 6 were females, as shown in Table 1.

The participants in the study had been employed at the university for varying durations, ranging from 4 to 29 years. The majority of the participants were aged between 30 and 59 years, suggesting that the clinic primarily serves a younger patient demographic for malaria treatment. Regarding educational qualifications, three participants held Ph.Ds., eighteen possessed master's degrees, and four had bachelor's degrees, indicating a high level of educational attainment among the participants. Participants occupied diverse roles within the university, including academic and non-academic staff, ensuring a broad range of perspectives on the malaria treatment process at the clinic.

Table 2: Themes and Sub-themes from Participants

Theme	Sub-themes	Illustrative Quotes from Respondents	Patients
Quality Treatment Process	Patient satisfaction experience	<p>“I felt much better, and that is why I will always go back to the clinic for treatment because their services are good.”</p> <p>“Since the treatment is good and the way they receive people, I will go back.”</p> <p>“I will go there because of the way they treated me when I had malaria last time.”</p> <p>“The healthcare treatment and protocols were satisfactory to me.”</p> <p>“I was okay and satisfied based on the treatment encounter process... I received the best treatment from the healthcare providers for the malaria illness.”</p>	<p>P 1</p> <p>P 2</p> <p>P 5</p> <p>P19</p> <p>P 22</p>
	Efficiency and support in service delivery	<p>“The treatment processes of the healthcare providers are fast because, at every service point, healthcare providers are there to support you to facilitate the process and ensure that services rendered meet our needs.”</p>	<p>P 7</p>



	“Health providers follow a client from the start to the finish of the treatment process... this ensures quality treatment.”	P 8
Continuity and follow-up care	“Healthcare treatment for malaria is better, and I will continue to receive healthcare services from the facility.”	P 6
	“I think I will go for a review after the malaria treatment since the protocol for treatment is good.... I received a better treatment encounter for malaria.”	P 25
Service Package		
Availability and use of diagnostic equipment	“Oh! When I went there, they conducted a lab test, and the outcome showed I had malaria.... The clinic has all that is needed to treat malaria.”	P 4
	“Yeah, they have some sophisticated equipment. At the lab, they have a series of machines for laboratory investigations of malaria, and the pharmacy has the drugs for the treatment of malaria.”	P10
	“I think the clinic has all the needed equipment to detect malaria parasites and treat the illness, and the providers are more experienced in their job.”	P15
	“The clinic has the needed equipment to test for malaria parasites, so I don’t see why I should not go back to access healthcare if I had malaria again.... It is a complete system for the treatment of malaria up to full recovery of the illness.”	P 23
	“After the encounter with the healthcare providers, I got all the drugs prescribed at the clinic’s pharmacy.”	P17
Integrated and comprehensive care system	“They have a complete process to handle malaria treatment from testing to the final stage of departure from the facility.”	P 3
	“They have the facilities to provide you with the right healthcare service in malaria	P11



treatment, and the services rendered are all in-house, and you feel at home.”

Word-of-Mouth Communication

Reassurance and hope through communication	“How they communicated with me gave me hope for a fast recovery from malaria.”	P12
	“I needed good word-of-mouth communication in the healthcare process to assure me of speedy recovery from the malaria parasite, and I had it.”	P14
	“In terms of communication, I feel relaxed when I interact with healthcare providers on malaria treatment... during interaction, their word-of-mouth communication gives hope that you will receive a good healthcare service.... Hopefully, this is an assurance to come back for treatment when you are not well.”	P16
	“The medical professionals communicate very well with me... Their communication with me gave an assurance of fast recovery from malaria.”	P 17
Empathetic and friendly interaction and return visits	“This is a very good environment for health delivery because of the friendly interaction I had, and this signifies a good service and treatment process.”	P 21
	“A very friendly word-of-mouth interaction.... they want to know more about you and how you feel.”	P 24
	“Throughout the health discussion, the professional’s word-of-mouth communication gives assurance for me to go back to the facility when malaria symptoms recur.”	P 20



**Service
Encounter
Confidentiality**

Privacy and protection of patient information	“There is always confidentiality in the treatment encounter process.... This makes the clinic the first place to visit whenever I have malaria.”	P 9
	“There was confidentiality, and the services rendered to me were perfect, and the doctor offered the needed advice.”	P13
Confidentiality as a driver of trust and clinic loyalty	“Because healthcare issues are private and very confidential, the healthcare providers at the university clinic don’t allow others access to people’s information.”	P 21
	“Aside from the interaction, the health treatment was good, and there was confidentiality in the encounter.”	P18
	“I think, besides the treatment, there is confidentiality in terms of information sharing.”	P 23

FINDINGS AND DISCUSSION

This study explored patient perspectives on key dimensions of the malaria treatment journey, revealing four major themes: Quality Treatment Process, Service Package, Word-of-Mouth Communication, and Service Encounter Confidentiality. Each theme is supported by participant narratives that highlight the relational and structural elements influencing patient experiences and treatment adherence. By strengthening these dimensions, healthcare providers not only enhance patient satisfaction and continuity of treatment (Akthar et al., 2024) but also contribute to the development of sustainable health delivery systems that prioritise long-term responsiveness, equity, and efficiency in malaria care.

Quality Treatment Process

Participants emphasised that efficient, continuous, and competent care was central to their satisfaction with malaria treatment. Many appreciated the fast and coordinated service delivery, as mentioned by a patient:



“The treatment processes of the healthcare providers are fast because, at every service point, healthcare providers are there to support you to facilitate the process and ensure that services rendered meet our needs” (P7).

This efficiency contributed to their willingness to return, as another patient puts it:

“Since the treatment is good and the way they receive people, I will go back” (P2).

The findings underscore the multifaceted nature of the malaria treatment journey, where relational and systemic factors intersect to shape patient experiences and adherence outcomes. Consistent with the existing literature (Street & Smith, 2021; Bombard et al., 2018), this study affirms that the quality of the treatment process, encompassing efficiency, continuity, and provider competence, is integral to fostering patient satisfaction and sustained engagement in malaria care. The emphasis on provider presence and timely service delivery aligns with quantitative evidence linking reduced wait times to higher adherence rates (Nkrumah et al., 2024), reinforcing the need to optimise clinical workflows in resource-limited settings.

Service Package

The availability of a comprehensive set of diagnostic and treatment services under one roof reinforced the reliability of care. Patients noted that the presence of essential equipment and experienced providers is essential for healthcare delivery. As the patient states:

“Yeah, they have some sophisticated equipment. At the lab, they have a series of machines for laboratory investigations of malaria, and the pharmacy has the drugs for the treatment of malaria” (P10).

This completeness of care made the clinic an appealing option for future visits, as echoed by a patient: *“They have the facilities to provide you with the right healthcare service in malaria treatment, and the services rendered are all in-house and you feel at home” (P11).*

The service package findings highlight the critical role of infrastructural readiness, confirming prior studies that emphasise the importance of accessible diagnostics and in-house pharmaceuticals in malaria treatment (Gulumbe et al., 2023). An integrated service delivery model not only streamlines care but also enhances patient confidence, supporting the implementation of comprehensive malaria control strategies such as the WHO’s “Test, Treat, Track” framework (Gwaza et al., 2024; WHO, 2024).

Word-of-Mouth Communication

Participants consistently highlighted the role of empathetic and reassuring communication in shaping their treatment experiences. Emotional support through words helped reduce anxiety and instilled hope. This is echoed by a patient:



“In terms of communication, I feel relaxed when I interact with healthcare providers on malaria treatment... their word-of-mouth communication gives hope that you will receive a good healthcare service” (P16).

This means communication also reinforced their confidence in recovery, as a patient maintained: *“The medical professionals communicate very well with me... Their communication with me gave an assurance of fast recovery from malaria” (P17).*

This finding indicates that word-of-mouth communication emerged as a salient bonding mechanism, echoing the tenets of Social Support Theory (House, 1987) and Patient-Centred Care (Stewart et al., 2011). The relational aspect of communication, providing reassurance, emotional support, and individualised attention, mitigates treatment anxiety and bolsters adherence motivation. This underscores a departure from the mistrust that has long dominated biomedical research and a focus on malaria interventions that incorporate human-centred approaches prioritising patient-provider rapport (Firdaus et al., 2025).

Service Encounter Confidentiality

Confidentiality during clinical encounters emerged as a key enabler of trust and loyalty. Patients stressed the importance of privacy in treatment discussions. A patient reiterates that:

“Because healthcare issues are private and very confidential, the healthcare providers at the university clinic don’t allow others access to people’s information” (P21).

Maintaining confidentiality was seen as a reason to return to the clinic. This was emphasised by a patient in a quote:

“There is always confidentiality in the treatment encounter process... This makes the clinic the first place to visit whenever I have malaria” (P9).

The theme of service encounter confidentiality reinforces its role as a critical enabler of trust, corroborating findings that confidentiality concerns influence healthcare-seeking behaviour and retention (Tran & Silvestri-Elmore, 2021). In malaria-endemic contexts, an emphasis on confidentiality suggests that strengthening privacy measures within malaria services could be a strategic lever to improve treatment outcomes. Overall, these findings demonstrate that patient bonding in malaria treatment is shaped by a dynamic interplay of system readiness, communication quality, interpersonal trust, and respect for privacy, each of which strengthens patient engagement and care continuity (Kisekka & Giboney, 2018).



CONCLUSION

Theoretical implication

The findings advance the existing literature in three principal ways. This study extends the application of Social Support Theory and Patient-Centred Care to tropical disease contexts, demonstrating its relevance in improving malaria treatment adherence in resource-limited settings. While traditionally applied to chronic disease management, the research highlights how emotional, informational, and instrumental support are key components that significantly enhance patient outcomes. Specifically, emotional support, such as reassurance from healthcare providers, helps alleviate patient anxiety during treatment and fosters stronger patient-provider bonds.

The findings reveal that quality treatment is a critical driver of patient-provider bonding, particularly in encouraging continuity of healthcare-seeking behaviour during malaria treatment. By emphasising quality treatment as a factor in the bonding process, this study extends Social Support Theory beyond psychosocial assistance, highlighting how structural healthcare improvements, such as adherence to clinical best practices, strengthen healing relationships.

The findings further demonstrate that comprehensive service packages play a pivotal role in bridging the gap between patient expectations and actual care experiences, making healthcare services more tangible and reliable. This provides a structured approach to harmonise clinical and experiential quality, ensuring malaria care meets patients' needs.

The findings also highlight word-of-mouth (WOM) communication as a key influencer in patients' selection of healthcare providers, reinforcing its role in shaping trust and treatment adherence. WOM aligns with the informational support dimension, demonstrating how social networks and shared patient experiences strengthen healing relationships. This extends Social Support Theory by showing that patient-provider attachment is built not only through direct interactions but also through community-endorsed credibility. By strategically leveraging WOM dynamics such as positive testimonials or peer recommendations, health systems can foster favourable communication channels, enhance patient retention, and encourage consistent care-seeking behaviour.

The study further underscores service encounter confidentiality as a foundational pillar of patient-provider relationships, particularly in malaria care contexts where privacy concerns may deter care-seeking. Within the Malaria-Specific Patient Bonding Framework (MSPBF), confidentiality represents a critical interactional factor that strengthens the emotional and psychological dimensions of social support.



Implications for Practice

The findings offer important practical implications for malaria control and care delivery and challenge the prevailing focus on biomedical approaches in malaria research and interventions. One, the study reinforces the need for healthcare practitioners to prioritise relational competencies in clinical practice. Empathetic communication, effective dissemination of health information, and sustained patient engagement are critical to fostering trust, improving treatment adherence, and enhancing patient satisfaction. These relational practices should be systematically incorporated into clinical protocols and professional training programmes, such as modules on interpersonal communication and patient-centred care.

Additionally, the research highlights the value of designing community-based interventions that are participatory, culturally sensitive, and responsive to local needs. Hence, malaria programme implementers engage community stakeholders in the planning and execution of malaria programmes, utilising locally appropriate communication strategies and building adaptive support systems, which can strengthen community trust, increase the continuity of malaria treatment services, and contribute to more sustainable and equitable health outcomes.

For policymakers, the integration of bonding dimensions of care, specifically emotional, informational, and instrumental support, into malaria control strategies is essential. Policies should move beyond a narrow biomedical focus to encompass the social and interpersonal factors that shape treatment adherence and health-seeking behaviour. In low-resource and underserved settings, the adoption of patient-centred care can enhance inclusivity, responsiveness, and effectiveness of malaria treatment.

Limitations and Directions for Future Research

While the study provides valuable insights into the bonding dimensions for care continuity, limitations must be acknowledged. One, the research relies on qualitative data gathered from a limited sample of patients at a university. This constraint may limit the generalizability of the findings to service sectors where different cultural, economic, or operational factors may influence service delivery dynamics. Again, the data collection involved participants who had previously had malaria. Therefore, the study could be extended to include people with different illnesses to broaden its scope. Future research should further explore the operationalisation of these relational dimensions within health systems, examining their impact on treatment outcomes, patient satisfaction, and long-term engagement with malaria prevention and care services.



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