**Barriers to the Uptake of Intermittent Preventive Treatment in Pregnancy with Sulfadoxine-Pyrimethamine among Pregnant Women in Northern Ghana: A Qualitative Study**

**Abstract**

**Introduction:** Malaria in pregnancy remains a major public health concern in sub-Saharan Africa, contributing to maternal morbidity, anaemia, and adverse birth outcomes. The World Health Organization (WHO) recommends intermittent preventive treatment in pregnancy with sulfadoxine-pyrimethamine (IPTp-SP) to reduce these risks. However, despite its proven efficacy, many pregnant women in Ghana, particularly in Sagnarigu Municipality, are reluctant to use IPTp-SP. Understanding the reasons behind this reluctance is crucial for improving uptake and maternal health outcomes.

**Aim:** This study aimed to explore the factors influencing pregnant women’s reluctance to use IPTp-SP in Sagnarigu Municipality from their perspectives.

**Methods:** A qualitative study was conducted using a content analysis approach. Sixteen pregnant women were purposively selected and interviewed using a semi-structured interview guide. Data were analyzed thematically, ensuring rigour through bracketing, member checking, peer debriefing, and maintaining an audit trail.

**Results:** The findings revealed multiple barriers to IPTp-SP uptake. These included limited knowledge about the benefits of the drug, fears of side effects, mistrust in the healthcare system, cultural and religious beliefs, and the influence of family members and traditional healers. Healthcare system challenges, such as drug stockouts and poor communication from providers, further discouraged utilization. Despite these barriers, some women expressed willingness to take IPTp-SP if reassured by healthcare workers and community influencers.

**Conclusion:** Addressing IPTp-SP barriers requires targeted health education, stronger community engagement, and improved healthcare provider communication. Ensuring a reliable supply of SP and enhancing antenatal counselling could significantly increase uptake. These findings provide critical insights for policymakers and healthcare providers seeking to improve malaria prevention strategies among pregnant women in Ghana.

**Keywords:** Intermittent preventive treatment, malaria in pregnancy, sulfadoxine-pyrimethamine, maternal health, Sagnarigu, Ghana, qualitative study.

1. **Introduction**

Malaria remains one of the most significant global public health challenges, with the highest burden concentrated in sub-Saharan Africa, which accounts for approximately 94% of global malaria cases and 96% of malaria-related deaths (1). Treatment failures in malaria have been linked majorly to the development of resistance ofthe malaria parasite to standard antimalarial agents particularly to chloroquine and tosome extentsulfadoxine-pyrimethamine (36,37). Pregnant women are particularly vulnerable to malaria, as the infection can cause severe complications such as maternal anaemia, low birth weight, preterm delivery, and even maternal and neonatal deaths(2,3). These adverse effects on both maternal and child health are a major public health concern, particularly in malaria-endemic regions. To mitigate these risks, the WHO recommends the use of Intermittent Preventive Treatment in Pregnancy with sulfadoxine-pyrimethamine (IPTp-SP), especially for pregnant women in malaria-endemic areas, starting in their second trimester (4). IPTp-SP is proven to reduce malaria-related complications during pregnancy, yet adherence to this preventive treatment is often suboptimal in many endemic regions(5,6). The distribution of sulfadoxine-pyrimethamine-resistant genotypes differed: in east and southern Africa, the high prevalence of dhps Lys540Glu defined high-level resistance to sulfadoxine-pyrimethamine, but was rarely identified in central and west Africa, whereas dhps Ala437Gly prevalence distinguished low from moderate levels of resistance (34,35).

In sub-Saharan Africa, where the malaria burden is particularly high, there are significant barriers to the widespread uptake of IPTp-SP. Studies have identified various factors that hinder adherence, including logistical issues, misconceptions about the treatment, and cultural beliefs that promote alternative remedies(7–9). Furthermore, the lack of sufficient healthcare infrastructure, limited access to trained healthcare providers, and the absence of consistent drug supplies in some areas contribute to the low uptake of IPTp-SP in many regions of West Africa(7). In Ghana, malaria is the leading cause of morbidity and mortality, and the Northern regions of the country, including Sagnarigu Municipality, have the highest malaria prevalence rates. Despite the national policy of administering IPTp-SP, its implementation remains inconsistent, particularly in rural and underserved regions, due to challenges such as limited access to healthcare services, transportation barriers, and poor healthcare communication(10–13).

In Sagnarigu Municipality, a district in Ghana’s Northern Region, pregnant women face a unique set of challenges that hinder their adherence to IPTp-SP. These challenges include long distances to healthcare facilities, low levels of education, and limited awareness of the benefits of IPTp-SP, particularly in rural areas(10). Cultural beliefs that prioritize traditional medicine over pharmaceutical interventions also play a significant role in reducing the acceptance of IPTp-SP (11,14). Furthermore, healthcare providers often encounter difficulties such as stockouts of IPTp-SP, inadequate counselling, and limited training, all of which contribute to the poor uptake of IPTp-SP(11,15). A study has also highlighted that pregnant women in rural areas are often hesitant to attend regular antenatal care visits due to financial constraints, cultural attitudes, and a lack of trust in the healthcare system(16–18). As a result, many pregnant women miss out on receiving their full dose of IPTp-SP, further diminishing the efficacy of malaria prevention efforts.

Given these barriers, it is crucial to understand the specific reasons behind the reluctance of pregnant women in Sagnarigu Municipality to use IPTp-SP. Research shows that a better understanding of the local context, including socio-economic, cultural, and healthcare-related factors, is necessary for improving the effectiveness of malaria prevention programs(19–21). By exploring these factors, this study aims to provide actionable insights that can inform targeted interventions to improve IPTp-SP adherence and ensure better maternal and fetal health outcomes in the Sagnarigu Municipality and other similar regions in Ghana. The findings will contribute to improving national malaria prevention strategies and help overcome the barriers that pregnant women face in accessing and adhering to IPTp-SP.

1. **Methods**

**Study Design**

This study will employ a qualitative research design to explore the factors influencing the uptake of Intermittent Preventive Treatment in Pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP) among pregnant women in Sagnarigu Municipality, Northern Ghana. A qualitative approach was chosen because it allows for an in-depth exploration of the personal, cultural, and healthcare-related factors that affect IPTp-SP use, as well as the subjective experiences and perspectives of pregnant women. This approach is well-suited for capturing nuanced insights that quantitative methods may not fully uncover(22).

**Study setting**

The Sagnarigu Municipal is one of the 261 Metropolitan, Municipal, and District Assemblies (MMDAs) in Ghana, located in the Northern Region. It was formed from the Tamale district and officially established on June 28, 2012, through Legislative Instrument (LI) 2066. The Municipality spans an area of 454 km² and lies between latitudes 9º16’ and 9º34’ North and longitudes 0º36’ and 0º57’ West, with its capital in Sagnarigu. It borders the Savelugu Municipal to the north, Tamale Metropolis to the south and east, Tolon District to the west, and Kumbungu District to the northwest. According to the 2021 population and housing census, the population is 341,711, comprising 170,199 males and 171,512 females.

**Study population**

The study will focus on sixteen (16) pregnant women residing in Sagnarigu Municipality, Northern Ghana. These women have been chosen as they are the target group for IPTp-SP, which is recommended for malaria prevention during pregnancy.

**Eligibility Criteria**

The inclusion criteria for this study are pregnant women aged 18 years or older, currently in their second or third trimester of pregnancy, and residing in Sagnarigu Municipality. Participants must have attended antenatal care clinics in the past six months, ensuring they have been exposed to IPTp-SP and can provide relevant insights. The exclusion criteria include pregnant women under 18 years or those in their first trimester, as well as women who are unable to provide informed consent due to language barriers or cognitive impairments. Additionally, women not residing in Sagnarigu Municipality will be excluded to ensure the study focuses on the target population within the region.

**Sample size and sampling technique**

The study will include 16 pregnant women, selected using a purposive sampling method. The sample size of 16 was determined with data saturation in mind. Saturation occurs when no new themes or insights emerge from the data, indicating that additional interviews will not provide further information. Purposive sampling was chosen because it allows for the intentional selection of participants who have specific knowledge and experiences related to the use of Intermittent Preventive Treatment in Pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP). This sampling strategy ensures that the participants can provide detailed and relevant insights into the barriers and facilitators to IPTp-SP uptake, making it ideal for exploring the specific factors affecting pregnant women in Sagnarigu Municipality.

**Data Collection Tools and Procedures**

For this study, semi-structured in-depth interviews were used as the primary data collection tool. This method was selected for its flexibility in exploring participants' personal experiences, perceptions, and insights while ensuring that the key topics related to the research objectives were systematically addressed (23). An interview guide was developed based on the study's main research questions, focusing on themes such as participants' knowledge and awareness of IPTp-SP, perceived barriers and benefits to its use, cultural beliefs surrounding pregnancy and malaria prevention, experiences with healthcare services, and the role of family and community in decision-making regarding IPTp-SP.

The interview guide included both open-ended and probing questions, allowing the interviewer to explore deeper insights while following up on unexpected responses that emerged during the conversations. In-depth interviews provided the opportunity to capture the nuances of each participant's experiences and offered a detailed understanding of the factors influencing IPTp-SP uptake.

The interviews were conducted in English or local languages spoken in the region, such as Dagbani and Gonja, with trained local translators assisting where necessary. This ensured that language was not a barrier to communication and that participants could express themselves comfortably. The translators were briefed on the study's objectives and ethical guidelines to maintain the integrity and accuracy of the data collection process.

Each interview was audio-recorded with the participant's consent. The audio recordings were transcribed verbatim to preserve the authenticity of the responses. Field notes were also taken during the interviews to capture non-verbal cues, contextual information, and any other observations that could not be recorded through audio. These field notes helped provide a more holistic understanding of the data and were incorporated into the analysis.

Prior to data collection, the research team were trained on ethical considerations, informed consent procedures, and interview techniques. Informed consent was obtained from each participant, who was fully briefed on the study's purpose, confidentiality, and the voluntary nature of participation. Participants were assured that their involvement was voluntary and that they could withdraw from the study at any time without facing any negative consequences. They were also assured that their identities would remain confidential, and any data collected would be anonymized.

The interviews took place at locations convenient for the participants, such as their homes or a private space within healthcare facilities, ensuring a comfortable and confidential setting. Each interview lasted approximately 45-60 minutes, providing enough time for in-depth exploration of the themes while respecting the participants' time and convenience.

Once data collection was completed, the audio recordings were securely stored in password-protected files. The recordings and field notes were transcribed and prepared for analysis. The process was iterative, with ongoing reflection to ensure that all key themes were addressed, and emerging issues were incorporated into the data analysis phase.

**Data Analysis**

Data analysis in this study was conducted using content analysis, a qualitative method that involves organizing and interpreting textual data to identify recurring patterns, themes, and meanings. Content analysis was chosen because it allowed for a systematic approach to examining the interviews and field notes and enabled the researcher to explore the underlying factors influencing the uptake of IPTp-SP among pregnant women in Sagnarigu.

A key component of the data analysis was bracketing, which is essential for minimizing researcher bias and ensuring the findings reflect the participants' perspectives. Bracketing involves setting aside pre-existing assumptions, beliefs, or experiences that the researcher might bring into the study. By consciously putting aside these biases, the researcher was able to approach the data with an open mind, ensuring that interpretations were grounded in the participants' own experiences rather than the researcher’s preconceived ideas. This practice of self-reflection was maintained throughout the analysis to preserve the integrity of the data.

Several strategies were employed during the content analysis process to enhance the rigour of the study. First, member checking was utilized to verify the accuracy of the findings. After the interviews were transcribed, participants were allowed to review the transcripts and provide feedback, ensuring that their views were accurately represented. This process helped to validate the authenticity of the data and allowed participants to correct any misrepresentations.

Additionally, peer debriefing was conducted, where the researcher engaged with colleagues and experts in the field to discuss the findings. This feedback helped challenge assumptions and interpretations, contributing to a more thorough and balanced analysis. The use of peer debriefing further strengthened the credibility and validity of the findings.

Triangulation was also employed by using multiple data sources—such as interview transcripts and field notes—to cross-check and confirm the themes and patterns identified during the content analysis. By comparing data from different sources, the researcher increased the trustworthiness of the analysis and ensured that the findings were consistent across different contexts.

An audit trail was maintained throughout the research process. This involved documenting every step of the data collection and analysis procedures, including how decisions were made and the rationale behind the methods chosen. The audit trail provided transparency, allowing for the research process to be reviewed for consistency and accuracy.

**Ethical clearance**

Ethical approval for this study was secured from the relevant ethical review committee before the initiation of data collection. The study complied with the ethical standards established by the Declaration of Helsinki and applicable local ethics regulations for research involving human subjects.

Informed permission was obtained from all individuals before they participated in the study. Participants were thoroughly apprised of the research's objective, the nature of their engagement, the voluntary aspect of their participation, and their entitlement to withdraw from the study at any moment without repercussions. The permission form was shown to participants in their choice language, and they were urged to inquire for clarification regarding the study protocols. Confidentiality and privacy were rigorously upheld throughout the investigation. The identities of participants were anonymized, and all identifiable information was securely maintained and segregated from the data. The study's results were given in aggregated form to maintain participant anonymity. The research also guaranteed that participants were not subjected to injury. No identifiable hazards related to participation; however, possible emotional strain from addressing difficult themes was acknowledged. In these instances, participants were informed of their right to terminate the interview at any moment, and support services were made available if necessary.

1. **Results**

**Socio-Demographic Characteristics of Participants**

The demographic characteristics of the participants in this study are summarized below. Of the 16 participants, the majority (50%) were aged between 25 and 34 years, followed by those aged 18 to 24 years (31.3%). A smaller proportion (18.7%) was in the 35–44-year age range. Regarding educational background, 37.5% of participants had no formal education, while 25% had received primary education, 25% had secondary education, and 12.5% had completed tertiary education. In terms of parity, 31.3% were primigravida (in their first pregnancy), while the majority (68.7%) were multigravida (having had two or more pregnancies). Employment status showed that 43.8% were unemployed, 37.5% were engaged in informal sector work (such as petty trade or farming), and 18.7% were formally employed. Lastly, marital status revealed that 81.3% of the participants were married, with the remaining 18.7% being single.

Table 1: Socio-Demographic Characteristics of Participants

|  |  |  |
| --- | --- | --- |
| Characteristic | Frequency (N=16) | Percentage (%) |
| **Age (years)** | |  |
| 18-24 | 5 | 31.3 |
| 25-34 | 8 | 50 |
| 35-44 | 3 | 18.7 |
| **Education Level** | |  |
| No formal education | 6 | 37.5 |
| Primary education | 4 | 25 |
| Secondary education | 4 | 25 |
| Tertiary education | 2 | 12.5 |
| **Parity** |  |  |
| Primigravida (1st pregnancy) | 5 | 31.3 |
| Multigravida (2+ pregnancies) | 11 | 68.7 |
| **Employment Status** | |  |
| Unemployed | 7 | 43.8 |
| Informal sector (e.g., petty trade, farming) | 6 | 37.5 |
| Formal employment | 3 | 18.7 |
| **Marital Status** | |  |
| Married | 13 | 81.3 |
| Single | 3 | 18.7 |

**Themes and Sub-Themes**

Table 2 presents key themes and sub-themes related to pregnant women's reluctance to use intermittent preventive treatment in pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP). These include fear and mistrust of IPTp-SP, driven by concerns about side effects and harm as well as general distrust in the healthcare system. Social and cultural beliefs also play a significant role, with influences from family and the community and a preference for herbal or traditional medicine. Knowledge and awareness gaps are evident, particularly due to limited information from healthcare providers and misconceptions about the treatment's effectiveness. Finally, health system challenges, such as inconsistent availability of IPTp-SP and poor interactions with healthcare providers, further contribute to the reluctance to use the treatment.

Table 2: Themes and Sub-Themes

|  |  |
| --- | --- |
| Themes | Sub-Themes |
| 1. Fear and Mistrust of IPTp-SP | Perceived side effects and harm |
|  | Distrust in the healthcare system |
| 2. Influence of Social and Cultural Beliefs | Family and community influence |
|  | Preference for herbal or traditional medicine |
| 3. Knowledge and Awareness Gaps | Limited information from healthcare providers |
|  | Misconceptions about IPTp-SP effectiveness |
| 4. Health System Challenges | Inconsistent availability of IPTp-SP |
|  | Poor interactions with healthcare providers |

**Fear and Mistrust of IPTp-SP**

Many participants expressed concerns about taking IPTp-SP, citing fears of side effects and distrust of the healthcare system. Their worries were often based on personal experiences or stories from peers and family members.

**Perceived Side Effects and Harm**

Many women reported that IPTp-SP made them feel weak, affecting their ability to carry out daily tasks.

*"The first time I took that malaria medicine, I felt very weak. I could not even stand properly. I lay down for hours, and I could not even cook for my family. My husband had to buy food for us because I was just lying there, feeling helpless. I told myself that I would never take it again because I cannot afford to be weak like that, especially when I have other children to take care of."* (29-year-old, multigravida)

*"I was scared to take it because my neighbour told me that when she drank it, she vomited the whole night, and her body was shaking. She said she felt dizzy and almost fell down. If someone I know went through that, why should I take the risk? What if it happens to me too?"* (23-year-old, primigravida)

**Distrust in the Healthcare System**

Some participants questioned the quality of medications provided in public health facilities and expressed doubts about their safety.

*"Sometimes, we hear that the medicines they give us have expired. How am I supposed to know if the one they are giving me is safe? They just pour it into a cup and say, ‘Drink it,’ without explaining anything. How can I trust that?"* (34-year-old, multigravida)

*"I told the nurse that I heard this medicine can harm the baby, and instead of explaining to me, she just got angry and said, ‘If you don’t want to take it, then don’t.’ That is not how a healthcare worker should behave. I need to understand why I should take something before I do."* (26-year-old, multigravida)

**Influence of Social and Cultural Beliefs**

The decision to take IPTp-SP was often influenced by family members, particularly husbands and mothers-in-law.

**Family and Community Influence**

Husbands and elders in the community played a crucial role in determining whether a pregnant woman took IPTp-SP.

*"My husband said I should not take the medicine. He told me that his friend, who is a doctor, warned him that the medicine is not always good. If my husband says it is dangerous, then I will listen to him. He is the one taking care of me, and he wants what is best for me and our baby."* (30-year-old, multigravida)

*"My mother-in-law told me that in her time, they never took any of these medicines, and they still gave birth to healthy children. She said all these new medicines are unnecessary, so she advised me not to take them."* (22-year-old, primigravida)

**Preference for Herbal or Traditional Medicine**

Some women believed that herbal remedies were safer and more effective than IPTp-SP.

*"I trust herbs more than hospital medicine. My mother boils neem leaves for me, and I drink it. It prevents malaria, and it does not make me feel sick like the medicine they give at the hospital."* (27-year-old, multigravida)

**Knowledge and Awareness Gaps**

A lack of information about IPTp-SP contributed to reluctance in taking the medication.

Limited Information from Healthcare Providers

Many women felt that nurses did not take the time to explain the importance of IPTp-SP.

*"When I went for my antenatal visit, the nurse just handed me the medicine and said, ‘Drink it.’ I asked what it was for, and she just looked at me without saying anything. How am I supposed to know if it is good for me if no one explains it?"* (25-year-old, primigravida)

**Health System Challenges**

Several women faced barriers in accessing IPTp-SP, including stockouts and negative experiences with healthcare providers.

**Inconsistent Availability of IPTp-SP**

Many women reported that the medication was often unavailable when they went for antenatal care.

*"I went to the hospital, and they told me the medicine was finished. I asked when it would be available, and they said they did not know. So if I get malaria now, what should I do?"* (33-year-old, multigravida)

**Poor Interactions with Healthcare Providers**

Some women described negative encounters with healthcare workers, which discouraged them from taking IPTp-SP.

*"Some nurses are very impatient. If you ask a question, they get angry. One time, I asked what the medicine does, and the nurse just said, ‘Are you taking it or not?’ That is not how they should talk to us."* (26-year-old, primigravida)

1. **Discussion**

The results of this study underscore several key factors that contribute to the low uptake of Intermittent Preventive Treatment in Pregnancy with sulfadoxine-pyrimethamine (IPTp-SP) among pregnant women in Sagnarigu Municipality, Northern Ghana. The findings suggest that the reluctance to use IPTp-SP is driven by both healthcare-related and socio-cultural barriers, aligning with previous studies conducted in other parts of sub-Saharan Africa.

The fear of side effects and harm associated with IPTp-SP is a commonly reported barrier in malaria-endemic regions. A scooping review in sub-Saharan Africa (15) indicates that many pregnant women experience dizziness, nausea, and weakness after taking IPTp-SP, which leads to reluctance in subsequent use. This is consistent with our findings, where participants shared concerns about the physical discomfort experienced after taking the medication. Additionally, similar to our study, research in other African countries found that women refused IPTp-SP due to prior negative experiences or anecdotes from friends and family (10,24). Whereas some people Experience these mild effects, not everyone experiences these effects. Also, at the time of taking the drugs, the pregnant women are often informed how they take and what they should do when they see certain side effects including going to a doctor in severe cases.

Distrust in the healthcare system has also been widely documented as a barrier to IPTp-SP adherence. Faye and Lugand, (2021) have found that poor communication between healthcare workers and patients resulted in misconceptions about the safety and efficacy of the drug(25). In our study, participants who felt that nurses did not properly explain the importance of IPTp-SP were more likely to avoid taking the medication, reflecting broader systemic issues with health

Communication. However, there are some inconsistencies with previous literature regarding the role of education in increasing IPTp-SP uptake(25,26). Previous studies suggested that formal education can increase adherence(26). In contrast, our findings reveal that even some educated women were hesitant due to misinformation and negative peer influence. This suggests that education alone may not be sufficient to increase IPTp-SP compliance and highlights the need for tailored health communication strategies beyond formal education. These findings suggest the need for healthcare systems to focus on improving patient-provider communication. Healthcare workers should be trained to better explain the benefits of IPTp-SP and address any concerns patients may have. Additionally, community-based interventions, utilizing trusted local figures such as midwives and community health workers, could improve trust in IPTp-SP and increase adherence.

The role of family and community influence in IPTp-SP uptake has been extensively documented. Some studies report that husbands and mothers-in-law often make decisions on maternal health, sometimes discouraging the use of IPTp-SP(10,27). In our study, many women avoided IPTp-SP due to spousal objections, which is consistent with the findings from previous literature. In patriarchal societies, husbands’ approval is often critical for medication adherence. Similarly, the preference for traditional medicine aligns with previous research (8,9), where herbal remedies were preferred over biomedical interventions. Participants in our study indicated that they believed herbal remedies were safer and more familiar than pharmaceutical drugs, reflecting the deep-rooted reliance on traditional medicine in many rural African communities. However, there are some inconsistencies with previous literature regarding peer influence. Previous studies suggested that peer discussions can encourage IPTp-SP use(28). In our study, peer discussions mostly spread fear and skepticism, which deviates from the broader pattern of peer influence seen in other studies. This may be due to local variations in social networks, where negative experiences tend to circulate faster than positive ones.

To address these cultural influences, health promotion strategies need to engage husbands, mothers-in-law, and community elders in malaria prevention education. Additionally, integrating traditional medicine practitioners into health education programs may help bridge the gap between modern and traditional healthcare approaches, making IPTp-SP more acceptable.

The lack of adequate information from healthcare workers is a widely reported issue in maternal healthcare (29). Studies show that many women do not fully understand why IPTp-SP is necessary, leading to non-compliance (29,30). In our study, participants expressed similar concerns, stating that they were not adequately informed about the drug's benefits, and this contributed to their reluctance to take it. Misconceptions about the effectiveness of IPTp-SP are also consistent with findings, where some women believed that IPTp-SP only treats existing malaria rather than preventing it (7,14). In our study, many participants also misunderstood the preventive nature of IPTp-SP, which led to skepticism about its value. Despite existing health education campaigns, misconceptions persist. Our findings suggest that even with awareness campaigns, many women continue to have doubts about the drug's effectiveness. This points to the need for more personalized and culturally relevant educational efforts. Our study highlights that general messages may not be sufficient to address the specific concerns and misconceptions women have. Health education efforts must go beyond simple awareness campaigns. Healthcare workers should provide engaging, personalized health talks during antenatal visits, using visual aids and relatable stories to reinforce the importance of IPTp-SP. This approach may improve understanding and help dispel misconceptions.

Studies elsewhere found that stockouts were a significant reason for non-adherence, which is consistent with our findings(10,31). Several women in our study reported that when they visited health facilities, IPTp-SP was unavailable, which led to delays or abandonment of treatment. When stockouts occur, women may lose motivation to take the medication later, even when it becomes available. Several participants reported negative interactions with healthcare providers who dismissed their concerns. These negative experiences can result in a lack of trust in the health system and a reluctance to take IPTp-SP. Our findings also differ slightly from some studies (32,33), which suggest that alternative service delivery models, such as community-based distribution, can mitigate supply chain issues. In our study, however, we did not find evidence that such systems were effectively implemented in the study area, indicating that Ghana’s health system may still face significant challenges in ensuring consistent access to IPTp-SP.

The study's strengths lie in its ability to provide in-depth insights into the perceptions and experiences of pregnant women regarding IPTp-SP, offering context-specific findings relevant to the Sagnarigu Municipality. The use of verbatim quotes allows for an authentic representation of participants' voices, providing rich data. However, the study has several limitations. The small sample size of 16 participants limits the generalizability of the findings. Additionally, the subjective nature of qualitative research means that the interpretation of data is influenced by the researcher’s perspective. There is also the potential for social desirability bias, where participants may provide responses they believe are more socially acceptable.

1. **Conclusion and recommendation**

This study highlights key barriers to IPTp-SP uptake among pregnant women in the Sagnarigu Municipality, including fear of side effects, cultural beliefs, misinformation, and healthcare system challenges. Despite the availability of IPTp-SP, these factors contribute to low adherence and underscore the need for more effective health communication and community-based interventions. To improve uptake, health education should be tailored to address local misconceptions and enhance understanding of IPTp-SP benefits, particularly through trusted community figures. Healthcare providers should be trained to engage more empathetically with patients, addressing concerns about side effects while ensuring a consistent supply of IPTp-SP at all antenatal clinics to prevent stockouts. Additionally, involving husbands and family members in malaria prevention training can help overcome cultural barriers and increase adherence.

1. **Implications for Policy and Practice**

The findings of this study highlight the multifaceted barriers to IPTp-SP uptake among pregnant women. Addressing these barriers requires strengthening community engagement, improving health system efficiency, and enhancing health communication strategies. Engaging husbands, mothers-in-law, and community leaders in malaria prevention education could help shift cultural perceptions and increase acceptance of IPTp-SP. Health systems must ensure consistent availability of IPTp-SP, and healthcare workers should be trained to communicate more effectively with pregnant women. Lastly, health education campaigns should be tailored to address local misconceptions and provide personalized, culturally relevant information to enhance understanding and adherence.

**Consent for publication**

Not applicable

**Data Availability**

Data used to support this study are available from the corresponding author upon request.

**Disclaimer (Artificial intelligence)**

Authors at this moment declare that generative AI (ChatGPT) has been used during the editing of manuscripts.

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