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Assessment of the Perception of Malaria Prevention among Pregnant Women Attending Antenatal Clinic at Obiozara Health Center Uburu, Ohaozara, Ebonyi State

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Abstract

Malaria infection during pregnancy remains a serious public health concern in tropical and subtropical regions, threatening the well-being of mothers, fetuses, and newborns. In Nigeria, it remains a leading cause of maternal mortality. This study investigated the perception of malaria prevention among pregnant women attending the antenatal clinic at Obiozara Health Center, Uburu, Ohaozara, Ebonyi State. A descriptive cross-sectional design was used, involving 200 respondents (pregnant women attending the antenatal clinic at Obiozara Health Center, Uburu, Ohaozara, Ebonyi State). The study revealed a high level of awareness about malaria prevention among pregnant women, with 89.9%; acknowledging that malaria during pregnancy is dangerous and preventable. The most commonly adopted preventive method was the use of mosquito coils and sprays (53%), followed by sleeping under insecticide-treated nets (96%), clearing bushes (35%), and destroying stagnant water (24%). However, a few respondents relied on ineffective or incorrect practices such as eating well, avoiding sunlight, or drinking herbal mixtures. The major challenges identified in malaria prevention were economic and behavioral factors, including the inability to afford mosquito nets (16%) and discomfort associated with sleeping under them (22%). Based on these findings, the study recommended improving the affordability and comfort of malaria prevention methods by promoting locally suitable mosquito nets and encouraging consistent use. It also suggested targeted community education to dispel misconceptions about malaria causes and prevention.

Keywords: Malaria during pregnancy, antenatal clinic, pregnant women, mosquito nets, trimester

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Introduction

Malaria remains a significant impediment to maternal and fetal health across sub-Saharan Africa, continuing to drive preventable complications and deaths even amid intensified eradication initiatives. The infection heightens risk of severe maternal anemia, intrauterine growth restriction, premature birth, and perinatal mortality, thereby weakening reproductive health outcomes throughout the region. In Nigeria, which bears one of the world's highest malaria burdens, the disease accounts for about 11% of maternal deaths and 25% of under-five mortality, undermining public health systems and national productivity through annual economic losses estimated at over US$1.1 billion in treatment costs, work absenteeism, and reduced labor output [1, 2].

Pregnancy induces physiological changes that increase vulnerability to *Plasmodium falciparum* infection, resulting in higher parasite densities and more severe outcomes, especially among primigravid women without prior immunity [3]. Such infections are linked to neonatal complications, including low birth weight and increased infant morbidity, perpetuating intergenerational health challenges in endemic regions like rural Nigeria. The deployment of long-lasting insecticidal nets (LLINs) and intermittent preventive treatment in pregnancy (IPTp) using sulfadoxine-pyrimethamine has reduced malaria transmission, yet infection remains common in ecological zones with stagnant water, poor drainage, and seasonal flooding, as observed in rural parts of Ebonyi State [4].

Updated malaria prevention guidelines advocate a comprehensive strategy involving routine LLIN use, initiation of IPTp after the first trimester, and prompt diagnostic testing to protect high-risk groups [1]. Research evidence indicates that LLIN utilization can reduce maternal parasitemia and neonatal mortality by up to 44%, while adequate IPTp adherence lowers the likelihood of low birth weight by approximately 35–43% [5]. However, program effectiveness depends largely on maternal knowledge and participation. In Nigeria, IPTp uptake for three or more doses stands at only 31%, compared with 50% LLIN ownership,

revealing persistent behavioral and structural challenges to prevention coverage [6, 7].

In many rural communities, inadequate health literacy contributes to misconceptions about malaria causation, with some attributing it to specific foods, spiritual forces, or poor hygiene instead of mosquito transmission [8]. Sociodemographic factors such as education, occupation, and access to health services significantly shape malaria-related knowledge and practices. Women with higher education are more likely to understand the causes and prevention of malaria (P=0.001) [9]. The Health Belief Model provides a framework for understanding these influences; suggesting that perceived risk, severity, benefits, and barriers determine preventive behavior among pregnant women [10].

In Ebonyi State, IPTp3+ coverage surpasses the national average at approximately 71% [11]. Nonetheless, malaria continues to burden maternal health services, underscoring the importance of localized education campaigns that dispel misconceptions and promote sustained preventive practices. Context-specific understanding of women's perceptions and attitudes is crucial for designing interventions that reflect cultural and structural realities. Consequently, this study assessed perceptions of malaria prevention among pregnant women attending antenatal clinics at Obiozara Health Center, Uburu, Ohaozara, Ebonyi State, Nigeria.

Materials and Methods

Study design

This study adopted a descriptive cross-sectional design to assess the perceptions of pregnant women regarding malaria prevention strategies during antenatal care at Obiozara Health Center, Uburu, Ohaozara Local Government Area, Ebonyi State, Nigeria. A purposively structured questionnaire was administered to a random sample of 200 participants attending routine antenatal sessions. This methodological framework yielded a contemporaneous examination of the participants' perception concerning malaria prophylaxis techniques, favored preventive modalities, and salient impediments encompassing resource constraints and entrenched perceptual distortions that impede the implementation of efficacious interventions within this localized demographic.

Study area

This research was carried out at Obiozara Health Centre, Uburu, Ohaozara, Ebonyi State. Obiozara Health Centre, founded October 1, 1985, in Uburu, Ohaozara LGA, Ebonyi State, Nigeria (approx. 7.77654° N, 7.77654° E), is a 24/7 government primary care facility serving rural residents with outpatient consultations, maternal/child health (ANC, immunization, nutrition), family planning, HIV/TB care, and basic scanning, but no ambulance, lab, pharmacy, or dental services, referrals go to nearby hospitals.

Figure 1: Map of the study area

Study population

The study involved pregnant women receiving antenatal care at Obiozara Health Center, Uburu. Those who showed indications of any medical condition that could affect the reliability of the findings were not included in the study.

Ethical considerations

Ethical approval for this study was obtained from the Health Research Ethics Committee of Ebonyi State Ministry of Health, Abakaliki, Nigeria. Permission to conduct the study was also granted by the management of Obiozara Health Center, Uburu. Informed consent was obtained from all participants after a clear explanation of the study objectives, and confidentiality of all information provided was strictly maintained.

Statistical analysis

Data obtained from the study were coded, entered, and analyzed using the Statistical Package for the Social Sciences (SPSS), IBM SPSS Statistics for Windows, Version 29.0 (IBM Corp., Armonk, NY, USA). Descriptive statistical tools like frequencies and percentages were used to summarize the data.

Results and Discussion

From Table 1, the majority of respondents were 25 years and above (58%), indicating that most participants were mature women of reproductive age. A large proportion (77%) had attained higher education, showing that the study population was generally well educated. In terms of religion, almost all participants (94%) were Christians, while a few (6%) practiced traditional religion. Most respondents were married (88%), reflecting the typical marital pattern among pregnant women in the study area. Occupationally, many were civil servants (44%) or self-employed (34%), suggesting a reasonable level of economic stability among them. Regarding parity, the majority (76%) had between 0 and 3 children, indicating low to moderate parity levels.

Table 1: Perception about malaria prevention during pregnancy

Variables	Response/Category	Frequency (n)	Percentage (%)
Do you think malaria during pregnancy is dangerous?	Yes	178	89
	No	22	11
	Total	**200**	**100**
Do you think it is important to prevent malaria during pregnancy?	Yes	191	95.5
	No	9	4.5
	Total	**200**	**100**
What do you think are the causes of malaria during pregnancy?	Eating certain foods	4	2
	Witches	40	20
	Stress	8	4
	Mosquito bites	144	72
	Dirty environment	4	2
	Total	**200**	**100**

Findings from Table 2 reveal that the majority of the pregnant women relied heavily on sleeping under insecticide-treated nets (ITNs) as their main method of malaria prevention, with 96% reporting consistent use. This indicates that ITNs are widely accepted and recognized as an effective and accessible strategy among the respondents. About 53% of the women used mosquito coils or insecticide sprays, reflecting an effort to complement net use with other household protective measures. A smaller proportion reported engaging in environmental control practices, such as clearing bushes (35%) and destroying stagnant water (24%), to reduce mosquito breeding sites around their homes. However, the use of intermittent preventive treatment (IPT) was surprisingly low, with only 14% of respondents indicating adherence. The same proportion (14%) mentioned eating well as a preventive measure, while very few (4%) admitted to using herbal mixtures or avoiding sunlight as means of malaria prevention.

Table 2: Methods adopted for malaria prevention among pregnant women attending Antenatal clinic

Malaria Prevention Method	Response	Frequency	%
Sleeping under Insecticide-Treated Net (ITN)	Yes	192	96
	No	8	4
	Total	**200**	**100**
Intermittent Preventive Treatment (IPT)	Yes	28	14
	No	172	86
	Total	**200**	**100**
Eating well	Yes	28	14
	No	172	86
	Total	**200**	**100**
Drinking herbal mixture	Yes	8	4
	No	192	96
	Total	**200**	**100**
Destroying stagnant water	Yes	48	24
	No	152	76
	Total	**200**	**100**
Clearing bushes	Yes	70	35
	No	130	65
	Total	**200**	**100**
Avoiding sunlight	Yes	8	4
	No	192	96
	Total	**200**	**100**
Use of mosquito coils/sprays	Yes	106	53
	No	94	47
	Total	**200**	**100**

Table 3: Militating factors against malaria prevention during pregnancy

Militating Factors	Response	Frequency	%
Inability to afford insecticide-treated nets	Yes	32	16
	No	168	84
	Total		**200**
Discomfort while sleeping under insecticide-treated nets	Yes	24	12
	No	176	88
	Total		**200**
Dislike for taking medications	Yes	78	39
	No	122	61
	Total		**200**
Religious belief against taking medication during pregnancy	Yes	16	8
	No	184	92
	Total		**200**

As shown in Table 3, the most common barrier was a dislike for taking medications, reported by 39% of respondents. This finding highlights how personal attitudes and perceptions toward drug intake can reduce adherence to preventive measures such as intermittent preventive therapy. Another obstacle was the inability to afford insecticide-treated nets (16%), pointing to the impact of financial constraints on access to malaria prevention tools. In addition to this, 12% of the women reported discomfort while sleeping under insecticide-treated nets, suggesting that physical unease may discourage consistent use even among those who are aware of its benefits. Only a few respondents (8%) linked their reluctance to take preventive medication to religious beliefs, demonstrating how cultural and spiritual factors may shape individual health behaviours during pregnancy.

The findings of this study provide insight into the perception and practices of malaria prevention among pregnant women attending antenatal clinics at Obiozara Health Center, Uburu, Ohaozara, Ebonyi State, Nigeria. Results in Table 1 show that a majority of respondents (89%) recognized malaria during pregnancy as dangerous, while 95.5% believed that preventing malaria was essential. This high level of awareness suggests that most women understood the potential consequences of malaria for both maternal and fetal health. Similar patterns of awareness were observed in previous studies conducted in Nigeria and other sub-Saharan countries. For instance, Okafor *et al*. [5] reported that Nigerian women generally possess good

knowledge of malaria risks during pregnancy, although this awareness does not always translate into consistent preventive behavior. Likewise, Agu *et al*. [15] found that capacity-building among female community volunteers improved awareness of malaria prevention but highlighted the need for sustained behavioral reinforcement.

Most respondents (72%) correctly attributed malaria to mosquito bites, aligning with widespread health education efforts. However, misconceptions still existed, as 20% linked malaria to witchcraft and 4% to stress, reflecting residual traditional beliefs that may influence prevention behaviors. This corroborates with the findings of Okafor *et al*. [5], who observed that even educated respondents sometimes held erroneous beliefs about malaria causation. Such misconceptions underline the importance of continuous antenatal health education.

Findings from Table 2 indicate that insecticide-treated nets (ITNs) were the most commonly adopted preventive method, with 96% of participants reporting their use. This demonstrates strong acceptance of ITNs as a primary preventive measure, consistent with the findings of Pons-Duran *et al*. [13], who noted that ITN use was generally higher than other preventive interventions across several sub-Saharan African countries. However, despite this encouraging pattern, only 14% of respondents in the present study reported taking intermittent preventive treatment (IPTp), a figure significantly lower than expected given national malaria control recommendations.

This low IPTp uptake corresponds with findings from Dun-Dery *et al*. [14], Nyaaba *et al*. [8], and Muhammad *et al*. [3], who each identified barriers such as fear of side effects, poor counseling by health workers, drug stockouts, and misconceptions about the safety of preventive medications during pregnancy. In this study, the reported dislike for taking medications (39%) further explains the low adherence to IPTp, suggesting that personal attitudes and mistrust toward medication use during pregnancy persist as major obstacles.

The use of mosquito coils and sprays (53%), along with environmental management practices like clearing bushes (35%) and destroying stagnant water (24%), indicates that many women combine different methods for protection. These behaviors demonstrate a proactive approach but also highlight gaps in understanding the most effective interventions. Pons-Duran *et al*. [13] emphasized that while households often use multiple strategies, proper IPTp uptake remains the cornerstone of malaria prevention during pregnancy.

According to Table 3, several factors continue to hinder malaria prevention among pregnant women. The most notable barrier was a dislike for taking medications (39%), followed by inability to afford ITNs (16%), and discomfort while sleeping under ITNs (12%). These findings are consistent with those of Nyaaba *et al*. [8] and Muhammad *et al*. [3], who reported that personal discomfort, economic hardship, and cultural perceptions often interfere with preventive adherence.

Economic limitations also remain a critical barrier. Despite widespread ITN distribution campaigns, some respondents (16%) still reported being unable to purchase nets. This finding is similar with Pons-Duran *et al*. [13], who observed that financial constraints and inconsistent distribution channels can limit ITN access, especially among rural women. Similarly, Nyaaba *et al*. [8] highlighted that discomfort due to heat or unsuitable sleeping arrangements often reduce consistent ITN use.

A small number of participants (8%) reported that taking medications during pregnancy conflicted with their religious beliefs. This echoes the findings of Nyaaba *et al*. [8] and Muhammad *et al*. [3], who demonstrated that cultural and religious norms influence health-seeking behavior among pregnant women. Addressing such barriers requires culturally sensitive community health education and engagement of local religious and traditional leaders to encourage acceptance of preventive medications.

Conclusion

This study assessed the perception and practices of malaria prevention among pregnant women attending antenatal clinics at Obiozara Health Center, Uburu. The findings revealed a strong awareness of malaria risks and an appreciation of the importance of prevention. Most respondents correctly identified mosquito bites as the source of infection and reported consistent use of insecticide-treated nets (ITNs). However, the uptake of intermittent preventive treatment in pregnancy (IPTp) remained very low. Several prominent barriers were identified, including reluctance to take medications, limited financial capacity to obtain ITNs, discomfort when using insecticide-treated nets, and religious restrictions. In conclusion, malaria prevention among pregnant women in the study area is constrained more by social and attitudinal factors than by lack of awareness. Strengthening antenatal health education, improving access to preventive medications and ITNs, and addressing cultural beliefs through community participation are important for enhancing malaria prevention during pregnancy.

Conflict of interests: The authors declare no conflict of interest.

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