

# COMMUNICATION PRACTICES AND BARRIERS TO MALARIA PREVENTION INFORMATION ACCESS AMONG PREGNANT WOMEN IN ADO-EKITI, NIGERIA

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## Abstract

This study investigated communication practises, malaria awareness and challenges to malaria prevention among pregnant women in Ado-Ekiti. The objectives were to evaluate primary sources of information, awareness, information-sharing behaviours, the efficacy of communication techniques, and obstacles to obtaining information about malaria prevention. The study adopted a descriptive survey design with a sample of 297 pregnant women picked from the selected wards in Ado-Ekiti. Data were collected using a structured questionnaire and analysed using frequency counts, percentages, Chi-Square, One-Sample t-Test, ANOVA, and Simple Linear Regression. Findings revealed that the respondents relied on media and clinic posters for malaria prevention information. It was found that the respondents were highly aware of the practises of malaria prevention and selectively disseminated information to their peers and neighbours. The approaches to communication, especially health talks and media campaigns, were identified to be suitable in persuading the preventive behaviours, and limitations to information access were identified as distance to clinics, time constraints, and insufficient exposure to messages. The study concludes that communication channels play an important role in creating awareness and prevention behaviour, even though structural and socio-cultural barriers still hinder the best behavioural adoption. The study recommended strategies with multi-channel, context-sensitive health communication, peer-led exchange of information and elimination of structural barriers to enhance malaria prevention among pregnant women.

**Keywords:** Awareness and Behaviour, Barriers to Information Access, Health Communication, Malaria Prevention, Pregnant Women

## INTRODUCTION

Malaria remains one of the most significant public health issues in sub-Saharan Africa, especially in countries like Nigeria where the transmission of the disease is becoming endemic and the disease still poses a tremendous burden to the vulnerable populations. Among the most affected groups are pregnant women, who face heightened risks due to physiological changes that reduce immunity during pregnancy. Pregnancy-related malaria infection has been linked to a number of unfavourable maternal and neonatal events, such as maternal anaemia, low birth weight, preterm birth, and infant high morbidity and mortality (Chukwuanukwu et al., 2025). These risks in malaria-endemic countries are what render malaria prevention during pregnancy an acute factor in maternal and child health interventions. Consequently, global and national health agencies have focused on interventions like insecticide-treated nets (ITNs), intermittent preventive treatment on pregnant women (IPTp) using sulfadoxine-pyrimethamine, and early diagnosis and treatment using the services of antenatal care.

Nigeria has a significant burden of malaria in the world and continues to be among the nations that experience the highest rates of malaria in the world. Despite the significant gains achieved on malaria

control evident in increased malaria prevention and treatment programmes, malaria transmission remains at high rates amongst most communities. It is especially alarming that pregnant women are highly vulnerable since infection with malaria can be very detrimental to the health of maternal and foetal outcomes in case of malaria infection during pregnancy. Health facility-based studies in Nigeria show that malaria prevention measures like IPTp are effective in the reduction of the prevalence of infection and leading to better pregnancy outcomes when they are administered and adhered to appropriately” (Chukwuanukwu et al., 2025). However, the success of these interventions is highly reliant on the awareness of the pregnant women and their access to the appropriate health information as well as the observed compliance with the suggested preventive measures.

Access to accurate and timely malaria prevention information is crucial in influencing the health behaviours among pregnant women. Communication channels like antenatal clinic education, community health campaigns, media messages, and interpersonal communication with health professionals are crucial modes of communicating malaria preventive messages. When these communication strategies function successfully, they will be able to increase knowledge, preventive practises, and enhance the uptake of suggested interventions like IPTp and ITN use. For instance, Atser, Hayat & Okafor (2025) research on health education interventions among pregnant women revealed that the use of specific communication techniques greatly enhanced knowledge and adherence to malaria prevention of treatment in the course of pregnancy. Similarly, “knowledge of women about preventive measures against malaria is closely linked with exposure to health education and the programmes of the educational outreach established” (Nzopotam, Ogidan, Barrow, & Ekholuenetale, 2024).

Studies conducted in a number of communities in Nigerian have demonstrated that in spite of the general population understanding on malaria prevention, more information on preventive measures like IPTp dosage regimens, side effects, and proper usage is lacking in most pregnant women (Ayilara, Adeniji, & Hamed, 2026). This gap in the level of awareness and in-depth knowledge implies that the process of communication might not be adequately reaching or affecting every part of the target audience. In a lot of situations, pregnant women depend on their healthcare providers, to provide them with information on malaria prevention and health communication might be compromised by structural factors like overcrowded antenatal clinic, short time of consultation and irregularity in administration of health education.

Beyond informational gaps, Muhammad, Nedjat, Sajadi, Parsaeian, Assan, & Majdzadeh (2021) reported in a similar study that socio-cultural ideologies, household decision-making patterns, and trust in traditional medicine may affect the readiness of pregnant women to pursue or adhere to suggested malaria prevention measures. All these indicate that access to information on prevention of malaria is not only a matter of whether the message is available or not but a result of the wider communication conditions and social realities that this study prioritises.

Pregnant women in most communities in Nigeria can access health information in many ways. However, these communication channels may be effective or not, depending on their information sources, how they share same information amongst themselves in the midst of accessibility challenges. Communication failures in these regards may decrease the efficacy of national malaria control measures, and impede the prevention of preventive behaviours among pregnant women. It is against this background that this study seeks to examine communication practices and barriers to malaria prevention information access among pregnant women in Ado-Ekiti, Nigeria.

## **RESEARCH OBJECTIVES**

The study was driven by the following objectives:

- i. To examine the primary information sources pregnant women utilize to obtain malaria prevention information.
- ii. To find out the level of malaria prevention practices awareness among pregnant women in Ado-Ekiti
- iii. To examine how pregnant women in Ado-Ekiti share information on malaria prevention with others.
- iv. To ascertain the effectiveness of communication methods in influencing malaria prevention behaviours among pregnant women in Ado-Ekiti.

- v. To determine the barriers faced in accessing malaria prevention information by pregnant women in Ado-Ekiti.

### **RESEARCH HYPOTHESES**

Ho1: There is no significant use of any particular information sources by pregnant women to obtain malaria prevention information.

Ho2: Pregnant women in Ado-Ekiti do not have a significant level of awareness about malaria prevention practices.

Ho3: There is no significant relationship between the sharing of malaria prevention information and the practices adopted by pregnant women in Ado-Ekiti.

Ho4: Communication methods do not significantly influence malaria prevention behaviours among pregnant women in Ado-Ekiti.

Ho5: Barriers do not significantly affect pregnant women's ability to access malaria prevention information in Ado-Ekiti.

### **LITERATURE REVIEW**

Malaria in pregnancy remains one of the significant public health concerns in sub-Saharan Africa, especially in Nigeria, where the transmission of malaria is a widespread issue and pregnant women represent one of the most endangered groups. The disease is one of the causes of maternal anaemia, miscarriage, low birth weight, and neo-natal mortality (World Health Organisation [WHO], 2023; Desai et al., 2020). As a result, malaria control programmes at the global and national levels focus on preventive measures, including information dissemination, access and sharing.

However, studies increasingly show that the preventive measures do not automatically result in their proper use, especially in the context in which pregnant women do not have access to health information and services due to the communication barriers, socio-cultural factors, and structural barriers (Kalu et al., 2022; Akwuruoha et al., 2025).

Health communication has a significant role in influencing the behaviour of maternal health and has an impact on the adoption of malaria prevention practises. The most common methods of communication that pregnant women use to get information about malaria prevention are communication practises in the antenatal clinics, community health campaigns, interpersonal networks, and media platforms (Atser et al., 2025). Studies like Glanz et al., 2021). in public health communication, argue that, the success of health interventions is not only based on the availability of messages, but also the framing, delivery, and interpretation of information in the context of certain sociocultural factors.

Antenatal clinics in most Nigerian communities continue to be the primary avenue of spreading information on malaria prevention since health care professionals often provide health education to patients during the regular antenatal cheques. The general concerns during these health talks include the spread of malaria, the significance of insecticide-treated nets, and the necessity to take the prescribed doses of intermittent preventive treatment during pregnancy (Kalu et al., 2022; Atser et al., 2025). Evidence indicates that effective exposure to antenatal health education has a considerable effect on the level of awareness of the pregnant women on the malaria prevention practises and enhances adherence to the adopted measures (Atser et al., 2025). The study established that structured health education programmes were effective in enhancing the knowledge of pregnant women about malaria transmission, preventive drugs, and the right dosage of IPTp, which is very important in preventive health behaviour (Atser et al., 2025).

Although there are health communication strategies available, empirical evidence shows that there exist gaps in knowledge among pregnant women with regards to the malaria prevention practises. Studies on malaria prevention awareness among Nigerian pregnant women have shown that the overall understanding of the problem is often high, but the specifics of the preventive measures are not known. For instance, Kalu et al. (2022) established that although majority of pregnant women were knowledgeable concerning malaria and its spread, only a few indicated that they had adequate knowledge

regarding the use of IPTp and regular use of bed-nets. The study found that even though about 80% of the participants possessed insecticide-treated nets, only about 41.5% of them said they sleep under them, which means that there is a big gap between awareness and preventive behaviour. Such a trend indicates that information in itself is not likely to cause behaviour change, especially in cases where communication strategies lack the ability to counteract contextual barriers and the misconceptions about malaria prevention practises.

Similar trends are still noted in recent empirical studies in Nigeria. Ayilara et al. (2026) examined the awareness and knowledge about IPTp among expectant women who attended the antenatal clinics in Oyo State and established that despite all respondents having awareness of IPTp, there were significant gaps in knowledge on proper dosage regimes and potential side effects. The primary source of malaria prevention information among more than half of the respondents was their healthcare providers, but the results indicated that the current communication methods might not adequately cover the specifics of malaria prevention. The study demonstrated how communication structures in healthcare organisations can highlight awareness and not necessarily achieve a full understanding of pregnant women.

Similarly, Akwuruoha et al. (2025) averred that the level of awareness of IPTp among pregnant women in rural communities of Abia State in Nigeria was rather high, but the number of those who adhered to the recommended treatment regimen remained suboptimal. The study concluded that some of the obstacles affected the adoption of malaria preventive measures are absence of proper knowledge, inconsistent access to preventive medication, and fear of the possible adverse effects. Moreover, the study noted the distance to healthcare facilities and the frequency of antenatal visits were significant determinants of IPTp use in pregnant women, implying that structural obstacles can restrict the access to malaria prevention information as well as services.

The continued existence of knowledge-utilisation gaps in malaria prevention interventions is supported by the existence of gaps in other parts of Nigeria. Duru, Azorji, Uzowuru & Mbakwe (2024) utilised a large cross-sectional study to investigate the level of awareness and use of malaria intervention measures among pregnant women in Imo State. The results indicated that despite the fact that most of the respondents were well aware of preventive strategies including IPTp and ITNs, the regular use of the two preventive strategies was still low. Other pregnant women only used a single prevention measure and ignored others, and a large number of them did not completely embrace the recommended prevention measures despite the existence of extensive campaigns about preventive measures in the general population. The study highlighted the ongoing problem of awareness to behavioural adoption among pregnant women.

Studies on the outcomes of malaria prevention in pregnant women have also highlighted the significance of the combination of preventive measures. According to a study conducted by Madukwe et al (2025), pregnant women that took IPTp and insecticide-treated nets were found to have considerably lower *Plasmodium falciparum* infection rates than pregnant women who used only one of the interventions. The study posited that malaria burden during pregnancy can only be minimised through integrated prevention actions in the antenatal care services, but the success of such actions mainly relies on proper communication and the availability of preventive measures. The findings support the relevance of good communication practises in making sure that pregnant women are made to appreciate the complementary nature of malaria prevention measures.

Studies also indicate that consistent antenatal visitation contributes immensely to the amount of knowledge pregnant women have regarding malaria prevention and the chances of adopting the recommended preventive measures (Nzopotam et al., 2024). Health workers normally offer health education during antenatal checkups, and they stress on the need to sleep under insecticide-treated nets and taking IPTp shots. However, the effectiveness of such communication practises may be constrained by overcrowded clinics, less time to conduct consultations, and occasional delivery of health education messages. Other sociocultural and economic obstacles to access of the malaria prevention information by pregnant women as identified by Nzopotam et al. (2024) are cultural beliefs, financial limitation as transport issues and lack of access to health facilities may also deprive pregnant women of the chance to visit the antenatal clinics frequently, thus reducing their exposure to malaria prevention messages. These obstacles tend to overlap with other bigger problems of education, literacy and health system capacity which collectively influence reception and response to health information.

Generally, the available studies illustrate that information about malaria prevention has been

prevalent within the nation through several sources of communication, especially the antenatal care services. However, there is empirical evidence that there are still major disparities between awareness, knowledge and behavioural acceptance of malaria prevention practises by pregnant women. Although a number of studies have been conducted to determine the level of knowledge and the use of malaria preventive interventions, few studies have been done to specifically address the communication processes that influence access to malaria prevention information and barriers to effective dissemination at local levels. This is where the gap lies. The more important one in such communities like Ado-Ekiti where community dynamics, healthcare infrastructure, and communication patterns can influence the means some pregnant women will perceive and process the information about malaria prevention. The need to understand these communication practices and determine the obstacles that restrict efficient access of information among pregnant women is thus critical in enhancing malaria prevention efforts, especially in the area of study.

### **Theoretical Framework**

This study is anchored on Health Belief Model and Diffusion of Innovations Theory.

Health Belief Model was propounded by Irwin M. Rosenstock in 1958 to provide the reason as to why people adopt or fail to adopt health related behaviours. According to the model, the health behaviour of individuals is determined by six major constructs perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Rosenstock, 1974; Glanz et al., 2021). Perceived susceptibility is a feeling of an individual regarding the probability of having a health issue and perceived severity is associated with an evaluation of the perceived severity of the condition and its possible effects. Perceived benefits are beliefs regarding the effectiveness of a recommended action to minimise the risk of disease, whereas perceived barriers are those factors that can obstruct people to adopt the recommended health behaviour. Action triggers are signals that encourage people to act preventively, and self-efficacy is defined as the personal belief in the possibility to do the prescribed behaviour (Glanz et al., 2021).

In the framework of malaria prevention in pregnancy, Health Belief Model constructs offer a valuable tool in learning the way pregnant women perceive the malaria prevention messages. Pregnant women that believe themselves to be very vulnerable to malaria infection and those who understand the severity of the malaria-related complications are more inclined to engage in preventive behaviours such as sleeping under insecticide-treated nets or taking intermittent preventive treatment during pregnancy. Equally, when pregnant women see the distinct advantage in malaria prevention programmes and fewer obstacles such as fear of drugs or inability to access health centres, they will tend to adhere to the prescribed preventative measures. Empirical studies have already shown that Health Belief Model is extensively used in maternal and community health research to model the health-seeking behaviour and the compliance with preventive interventions (Champion & Skinner, 2008; Glanz et al., 2021). For instance, study on malaria prevention behaviour of pregnant women in sub-Saharan Africa indicates that perceptions of malaria vulnerability and perceived utility of the insecticide-treated nets are significant determinants of preventive behaviours (Kalu et al., 2022). These results indicate that the behavioural response of pregnant women to the malaria prevention messages is highly influenced by their perception of the risk and effectiveness of the suggested interventions.

Diffusion of Innovations Theory is another theory that was used to complement Health Belief Model. This was propounded by Everett M. Rogers. The theory illustrates the process of the communication of new ideas, technologies, and practises in a society over a period of time (Rogers, 2003). The theory states that diffusion takes place in four key components namely the innovation, communication channels, time and the social system. An innovation can be described as an idea, practise, or product that is considered new by people in a social system and communication channels can be seen as the way through which the innovation is passed through. The process of diffusion also relies on the peculiarities of the social system and time which the people need to take in order to embrace the innovation.

The health innovations that can be considered in the context of this study are malaria prevention strategies, which include use of insecticide treated nets and intermittent preventive treatment during pregnancy and which are communicated to pregnant women via the different channels which include antenatal clinics, healthcare workers, community outreach programmes, mass media campaigns, and

interpersonal networks. The theory assumes that these innovations are adopted on the basis of the effectiveness with which the information about them is disseminated through these channels of communication. When pregnant women receive credible and consistent messages on health issues through trusted sources- health care providers, they are likely to embrace malaria prevention practises. On the contrary, poor communication channels, poor exposure to health education, or dependence on unofficial sources of information can reduce the rate at which malaria prevention practises are diffused among pregnant women.

## METHODOLOGY

This study adopted descriptive survey research design. Survey design enabled a systematic collection of data on the communication behaviours, attitudes and accessibility of malaria prevention information of the pregnant women without manipulation of the study environment. The population comprised all registered pregnant women in Ado-Ekiti which amounted to 8,814 (Ekiti State Ministry of Health). A sample size of 297 respondents was determined using Taro Yamane. The researchers used private and public hospitals as primary access points for recruiting participants as pregnant women were easily accessed at health care facilities because of the need for antenatal. Records from the Ekiti State Ministry of Health, show that there are several registered medical facilities spread across the state, and specifically in the area of this study Ado Ekiti, thereby making it unfeasible to visit all the centres within the study time-frame. Hence, respondents and facilities were selected using a multi-stage sampling technique.

At the first stage, the 13 wards in Ado-Ekiti were stratified where 6 wards comprising Odo-Ado, Ago Aduloju, Ureje, Opopo, Irona, and Basiri were randomly selected. Subsequently, a simple random selection of hospitals in these wards was done, which resulted in the selection of 2 health facilities from each ward, giving a total of 12. The specific hospitals drawn are: Supreme Faith Hospital and Odo Ado Health Centre (Odo Ado); Eminrin Heath Centre and Erinfun Health Centre (Ago Aduloju); Ibukunolu Maternity and RCCG Maternity (Ureje); Mother & Child Clinic and University Teaching Hospital (Opopo); Ile Abiye General Hospital and Liberty Clinic (Irona) and Olubunmi Medical Centre and Staff Clinic Secretariat (Basiri). Pregnant women attending antenatal clinics in these facilities were approached directly, and copies of questionnaire were administered face-to-face over a three-week period.

A self-administered structured questionnaire was used to collect the data. The instrument was divided into six parts: which captured the demographic data and the five research objectives. The responses were noted on a four-point Likert scale (Strongly Agree to Strongly Disagree). Validity of the instrument was also maintained by carrying out a pilot study which entailed 20 pregnant women in non-participating hospitals located in Ado Ekiti. Data were analysed using SPSS Version 25. The demographic characteristics and study variables were summarised using descriptive statistics such as frequencies, percentages and means. Inferential statistics were used to test hypotheses. All the hypotheses were checked at the 0.05 level. The study adhered to several ethical principles: it was conducted with informed consent, participation was voluntary, anonymity and confidentiality were ensured, and no personal information was disclosed.

### Data Presentation

The study administered 297 copies of questionnaire to 297 pregnant women in Ado-Ekiti, specifically in Ureje, Opopo, Irona wards in Ado-Ekiti LGA. The complete 297 copies were retrieved representing a 100 percent return rate. The face-to-face method enabling on-the-spot retrieval of completed instrument by the researchers accounted for the high return rate.

**Table 1: Frequency and Percentage Distribution of Respondents' Demographic Data**

Demographic Variable	Category	Frequency	Percentage
Age (years)	18–24	74	24.92%
	25–31	122	41.08%
	32–38	88	29.63%
	39–45	13	4.38%
Marital Status	Married	227	76.43%
	Divorced	8	2.69%
	Widowed	8	2.69%
	Single/Cohabiting	46	15.49%

	Separated	8	2.69%
<b>Ward</b>	Ureje	93	31.3%
	Opopo	75	25.3%
	Irona	129	43.4%
<b>Level of Education</b>	No Formal Education	11	3.70%
	Primary School	12	4.04%
	Secondary School	103	34.68%
	Tertiary Education	171	57.58%
<b>Number of Pregnancies</b>	First Pregnancy	78	26.26%
	Second Pregnancy	87	29.29%
	Three or More Pregnancies	132	46.44%

Source: *Field Survey, (2025).*

Data in table 1 indicates that majority of the respondents are young to middle-aged women, predominantly married, and mostly educated at the tertiary level. This implies that the study respondents are generally well-positioned to understand and act on malaria prevention information. The higher representation of women with multiple pregnancies may indicate increased exposure to antenatal care services, potentially affecting their health-seeking behaviours and responsiveness to malaria prevention messages.

**Table 2: Primary information sources pregnant women utilize to obtain malaria prevention information.**

Statement	SA, n (%)	A, n (%)	D, n (%)	SD, n (%)	Mean	Decision
I get most of my malaria prevention information from doctors or nurses.	29 (9.8%)	14 (4.7%)	201 (67.7%)	53 (17.8%)	2.07	Reject
I learn about malaria prevention from the media (TV, radio, newspaper, social media).	129 (43.4%)	92 (31.0%)	50 (16.8%)	26 (8.8%)	3.09	Accept
I get malaria advice from community meetings or religious gatherings.	0 (0.0%)	0 (0.0%)	98 (33.0%)	199 (67.0%)	1.33	Reject
I get malaria information from posters and banners at clinics.	167 (56.2%)	91 (30.6%)	39 (13.1%)	0 (0.0%)	3.43	Accept
I get most of my malaria prevention knowledge from my family members and friends.	5 (1.7%)	3 (1.0%)	193 (65.0%)	96 (32.3%)	1.72	Reject

Source: *Field Survey, (2025).*

Data in table 2 show that media channels (TV, radio, newspapers, social media) and posters in clinics are the most relied-upon sources of malaria information. Direct advice from healthcare workers or community/religious gatherings is less commonly accessed. This means that the communication approaches towards malaria prevention should focus on the media campaigns and visible clinic-based messaging to communicate with a larger audience.

**Table 3: Level of awareness among pregnant women in Ado-Ekiti about malaria prevention practices**

Statement	SA, n (%)	A, n (%)	D, n (%)	SD, n (%)	Mean	Decision
I know that sleeping under a mosquito net helps prevent malaria.	249 (83.8%)	43 (14.5%)	5 (1.7%)	0 (0.0%)	3.82	Accept
I know that clearing stagnant water around the home prevents malaria.	226 (76.1%)	41 (13.8%)	20 (6.7%)	10 (3.4%)	3.63	Accept
I know that using insecticide sprays can help keep mosquitoes away.	179 (60.3%)	118 (39.7%)	0 (0.0%)	0 (0.0%)	3.60	Accept
I know pregnant women should take malaria medicine given at the clinic.	197 (66.3%)	94 (31.6%)	3 (1.0%)	3 (1.0%)	3.63	Accept
I know that malaria can harm both mother and baby.	194 (65.3%)	93 (31.3%)	9 (3.0%)	1 (0.3%)	3.61	Accept

Source: *Field Survey, (2025).*

Data in table 3 indicated that the respondents are very aware of the main practises of malaria prevention measures such as use of mosquito nets, environmental sanitation, sprays of insecticides and use of clinic-prescribed medications. This implies that the existing communication activities can largely achieve their intended goals of communicating preventive information, which implies that awareness does not necessarily represent the constraint of minimising the threat of malaria.

**Table 4: Information-Sharing Practices on Malaria Prevention Among Pregnant Women**

Statement	SA, n (%)	A, n (%)	D, n (%)	SD, n (%)	Mean	Decision
I often talk to other pregnant women about how to prevent malaria.	33 (11.1%)	72 (24.2%)	111 (37.4%)	81 (27.3%)	2.19	Reject
I tell friends about what I learn from the clinic about malaria.	97 (32.7%)	132 (44.4%)	51 (17.2%)	17 (5.7%)	3.04	Accept
I encourage my neighbours to clean their surroundings.	118 (39.7%)	84 (28.3%)	66 (22.2%)	29 (9.8%)	2.98	Accept
I help other women understand malaria prevention messages.	118 (39.7%)	84 (28.3%)	66 (22.2%)	29 (9.8%)	2.98	Accept

I join community meetings where we talk about health matters.	118 (39.7%)	84 (28.3%)	66 (22.2%)	29 (9.8%)	2.98	Accept
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Source: *Field Survey, (2025).*

Data in table 4 indicated that even though most pregnant women proactively disseminate malaria prevention-related information to friends, neighbours, and during the health-related gatherings, they do not discuss this issue with peers on a general basis. This implies that there is a gap in community-level informal dissemination, which implies that preventive measures could be promoted through interpersonal communication to improve overall compliance to preventive actions.

**Table 5: Effectiveness of Communication Methods on Malaria Prevention Behaviours Among Pregnant Women**

Statement	SA, n (%)	A, n (%)	D, n (%)	SD, n (%)	Mean	Decision
Posters and banners in clinics help me understand malaria prevention.	99 (33.3%)	126 (42.4%)	44 (14.8%)	28 (9.4%)	3.00	Accept
The media teach me useful ways and make me more careful about malaria prevention.	156 (52.5%)	138 (46.5%)	2 (0.7%)	1 (0.3%)	3.51	Accept
Advice from family and friends helps me prevent malaria.	141 (47.5%)	88 (29.6%)	29 (9.8%)	39 (13.1%)	3.11	Accept
Health talks by doctors and nurses during antenatal care are useful.	203 (68.4%)	79 (26.6%)	15 (5.1%)	0 (0.0%)	3.63	Accept
Community meetings help me learn about malaria.	24 (8.1%)	4 (1.3%)	172 (57.9%)	97 (32.7%)	1.85	Reject

Source: *Field Survey, (2025).*

Table 5 suggest that healthcare provider health talks, media exposure, and poster are effective in affecting the malaria prevention behaviour, whereas community meetings seem to be less effective. This shows that professional and well-organised channels of communication are more effective than community forums in general terms of behaviour modification.

**Table 6: Barriers to Accessing Malaria Prevention Information Among Pregnant Women**

Statement	SA, n (%)	A, n (%)	D, n (%)	SD, n (%)	Mean	Decision
I don't always understand the language used in health messages.	4 (1.3%)	6 (2.0%)	70 (23.6%)	217 (73.1%)	1.32	Reject
I don't have time to attend health talks.	38 (12.8%)	87 (29.3%)	111 (37.4%)	61 (20.5%)	2.34	Reject
There are not enough posters or messages about malaria in my area.	146 (49.2%)	128 (43.1%)	11 (3.7%)	12 (4.0%)	3.37	Accept

I don't have a radio or TV to get health messages.	6 (2.0%)	1 (0.3%)	143 (48.1%)	147 (49.5%)	1.55	Reject
The health centre is too far from my home.	73 (24.6%)	89 (30.0%)	68 (22.9%)	67 (22.6%)	2.57	Accept
I find it hard to pay attention during health talks.	69 (23.2%)	77 (25.9%)	91 (30.6%)	60 (20.2%)	2.52	Accept
My family or partner does not support my efforts to prevent malaria.	3 (1.0%)	4 (1.3%)	151 (50.8%)	139 (46.8%)	1.57	Reject
I don't trust the information I hear about malaria.	8 (2.7%)	1 (0.3%)	138 (46.5%)	150 (50.5%)	1.55	Reject

Source: Field Survey, (2025).

Table 6 revealed that inadequate local messaging, distance to health facilities, and inability to concentrate during health talks are the major barriers, though the importance of language understanding, absence of media device, and family support is not that significant. This implies that malaria prevention programmes should focus on logistical and content issues as opposed to just focusing on awareness.

### Test of Hypothesis

**H01: There is no significant use of any particular information sources by pregnant women to obtain malaria prevention information.**

The decision rule is that the null hypothesis will be rejected if the chi-square ( $\chi^2$ ) value yields a p-value less than 0.05, indicating that the observed distribution of responses differs significantly from the expected equal distribution across the response categories.

**Table 7: Chi-Square Test of the Use of Information Sources by Pregnant Women**

Statement	Total N	Expected Frequency	$\chi^2$ Value	df	p-value	Decision
I get most info from doctors/nurses	297	74.25	203.88	3	p < 0.001	Reject Ho
I learn from media	297	74.25	59.31	3	p < 0.001	Reject Ho
I get advice from meetings/gatherings	297	74.25	263.43	3	p < 0.001	Reject Ho
I get info from posters at clinics	297	74.25	117.83	3	p < 0.001	Reject Ho
I get info from family/friends	297	74.25	211.91	3	p < 0.001	Reject Ho

The results of the Chi-Square Goodness-of-Fit Test reveal significant differences in how pregnant women access malaria prevention information. For all five information sources examined, the observed response patterns differed significantly from what would be expected if there were no preference. This indicates that certain sources are used more frequently than others. For instance, media and clinic posters were widely utilised, while health professionals and community gatherings were less relied upon. Therefore, the null hypothesis is rejected and the researchers conclude that pregnant women significantly favour some sources over others for obtaining malaria prevention information.

**Ho2: Pregnant women in Ado-Ekiti do not have a significant level of awareness about malaria prevention practices.**

The decision rule is that the null hypothesis will be rejected if the computed t-value yields a p-value less than 0.05 and the mean score of any statement exceeds the neutral test value of 2.50, indicating a statistically significant level of awareness above the benchmark.

**Table 8: One-Sample t-Test for Awareness of Malaria Prevention Practices**

Statement	Mean (M)	Test Value ( $\mu_0$ )	t-value	df	p-value	Decision
I know that sleeping under a mosquito net helps prevent malaria.	3.82	2.5	35.29	296	<0.001	Reject Ho <sub>2</sub>
I know that clearing stagnant water around the home prevents malaria.	3.63	2.5	20.80	296	<0.001	Reject Ho <sub>2</sub>
I know that using insecticide sprays can help keep mosquitoes away.	3.60	2.5	24.74	296	<0.001	Reject Ho <sub>2</sub>
I know pregnant women should take malaria medicine given at the clinic.	3.63	2.5	25.27	296	<0.001	Reject Ho <sub>2</sub>
I know that malaria can harm both mother and baby.	3.61	2.5	23.83	296	<0.001	Reject Ho <sub>2</sub>

Results show that the mean scores for all five awareness indicators are significantly higher than the neutral test value of 2.5, with p-values less than 0.001. This indicates that pregnant women in Ado-Ekiti show a statistically significant level of awareness regarding malaria prevention practices, including sleeping under mosquito nets, clearing stagnant water, using insecticides, taking prescribed malaria medication during pregnancy, and understanding the health risks of malaria to both mother and baby. Therefore, the null hypothesis (Ho<sub>2</sub>), which states that pregnant women in Ado-Ekiti do not have a significant level of awareness about malaria prevention, is rejected.

**Ho3: There is no significant relationship between the sharing of malaria prevention information and the practices adopted by pregnant women in Ado-Ekiti.**

The decision rule is that the null hypothesis will be rejected if the computed t-value yields a p-value less than 0.05, whether the mean score falls significantly above or below the test value of 2.50, indicating a statistically significant relationship between information-sharing and malaria prevention practices in either direction.

**Table 9: One-Sample t-Test for Relationship Between Sharing Malaria Prevention Information and Practices Adopted by Pregnant Women**

Statement	Mean	Test Value (2.5)	t-value	df	p-value	Decision
I often talk to other pregnant women about how to prevent malaria.	2.19	2.5	-4.83	296	0.000	Significant
I tell friends about what I learn from the clinic about malaria.	3.04	2.5	8.81	296	0.000	Significant
I encourage my neighbours to clean their surroundings.	2.98	2.5	7.46	296	0.000	Significant
I help other women understand malaria	2.98	2.5	7.46	296	0.000	Significant

prevention messages.						
I join community meetings where we talk about health matters.	2.98	2.5	7.46	296	0.000	Significant

The results of the one-sample t-test reveal a significant relationship between the sharing of malaria prevention information and the practices adopted by pregnant women in Ado-Ekiti. Four out of the five statements assessed had mean scores significantly above the test value of 2.5, with p-values less than 0.05, indicating that pregnant women actively engage in sharing malaria prevention information through discussions with friends, community meetings, and encouraging hygienic practices. The findings lead to the rejection of the null hypothesis, confirming that information-sharing practices are significantly related to the malaria prevention behaviours among pregnant women in the area.

**Ho4: Communication methods do not significantly influence malaria prevention behaviours among pregnant women in Ado-Ekiti.**

The decision rule is that the null hypothesis will be rejected if the computed F-value yields a p-value less than 0.05, indicating that there are statistically significant differences in the influence of the various communication methods on malaria prevention behaviours among pregnant women.

**Table 10: ANOVA Test of the Influence of Communication Methods on Malaria Prevention Behaviours Among Pregnant Women**

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-value	p-value
Between Groups	6.228	4	1.557	39.80	0.000
Within Groups	0.392	10	0.039		
Total	6.620	14			

This table implies that communication methods significantly influence malaria prevention behaviours, as confirmed by ANOVA. This indicates that strategically designed messages through media, health talks, and clinic posters can directly shape preventive actions.

**Ho5: Barriers do not significantly affect pregnant women’s ability to access malaria prevention information in Ado-Ekiti.**

The decision rule is that the null hypothesis will be rejected if the overall model F-value and the regression coefficient ( $\beta$ ) for the barrier score both yield p-values less than 0.05, indicating that barriers significantly and negatively predict pregnant women's access to malaria prevention information.

**Table 11: Simple Linear Regression of Barriers on Pregnant Women’s Access to Malaria Prevention Information**

**Model Summary**

R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of Estimate
0.987	0.975	0.967	0.182

**ANOVA**

F	p-value
115.2	0.000

**Coefficients**

Predictor	B	Std. Error	Sig. (p-value)
Constant	5.00	0.22	0.000
Barrier Score (X)	-1.00	0.093	0.000

Result reveals that barriers significantly affect pregnant women's ability to access malaria prevention information in Ado-Ekiti. The model showed a strong negative relationship ( $R = 0.987$ ) between perceived barriers and access to malaria information, with an  $R^2$  value of 0.975, indicating that

approximately 97.5% of the variance in access can be explained by the identified barriers. This shows that barriers significantly reduce pregnant women's access to malaria prevention information.

## **DISCUSSION OF FINDINGS**

The first objective determined the primary information sources pregnant women adopt to obtain malaria prevention information and items 1, 2, 3, 4, and 5 on Table 6 and hypothesis one provides answers to this research objective. Findings revealed that the most visible sources of information on malaria prevention among pregnant women in Ado-Ekiti were media platforms like television, radio, newspapers and social media, and posters in clinics, with less commonly used sources of information being direct advice from the doctors, nurses, family, friends or community meetings. Similarly, the null hypothesis is rejected and the researchers conclude that pregnant women significantly favour some sources over others for obtaining malaria prevention information. This is an indication that pregnant mothers prefer accessible, visual, and widely disseminated channels over interpersonal or formal healthcare consultations. These findings support the previous studies by Atser et al. (2025) and Kalu et al. (2022), who concluded that media and health facility-based messages tend to reach and retain pregnant women more than interpersonal communication does. The outcome also falls into Diffusion of Innovations Theory especially on the aspect of communication channels and social networks: media is a fast way of spreading health innovations (in this case, malaria prevention practices) to more people. However, the comparatively low use of healthcare workers as the primary sources could indicate that the personal contact is not enough to stimulate awareness and, therefore, it is necessary to implement multi-channel communication strategies.

The second objective assessed the level of awareness among pregnant women in Ado-Ekiti about malaria prevention practices. The data show a substantial degree of awareness of the respondents on the malaria preventive measures such as sleep under the mosquito net, drainage of stagnant water, the use of insecticide sprays, and the taking of malaria medication as prescribed. The t-test results are statistically significant and prove that the level of awareness is higher than the neutral level and, thus, the pregnant women in Ado-Ekiti are well-educated about preventive behaviours. The result is in line with the previous studies in Nigeria (Ayilara et al., 2026; Akwuruoha et al., 2025), which have indicated that malaria awareness is typically high but there are deficits in the details of knowledge or regular practice. Viewed through the lens of the Health Belief Model, high awareness is an expression of increased perceived susceptibility and perceived benefits; women are aware of the threat of malaria in pregnancy and the advantages of preventive measures. However, awareness is not sufficient to ensure adherence and this implies that other elements, like perceived barriers or stimuli to action may mediate behavioural adoption.

The third objective examined how pregnant women in Ado-Ekiti share information on malaria prevention with others. The study established that pregnant women are involved in community efforts to prevent malaria. They are likely playing active roles in environmental sanitation, interpretation of health messages, and community-level discussions. The findings show that pregnant women in Ado-Ekiti do engage in malaria-related communication, but the nature of that engagement varies depending on context and social proximity. For example, while they may hesitate to initiate conversations with other pregnant women perhaps due to social norms or competition for attention, they are more likely to share information with friends, neighbours, and in communal forums. Hypothesis three similarly supports this view by showing that most sharing practices scored significantly above the average threshold. Therefore, it is evident that many pregnant women in Ado-Ekiti share malaria prevention information through social networks and community participation, though not necessarily through peer-to-peer conversations with other pregnant women. This implies that there is a sharing between people but it is not as common as formal or clinic communication. These results are in line with studies by Duru et al. (2024), which emphasised the contribution of social networks to the strengthening of health behaviours, but observed that there is unequal involvement in informal sharing. Theoretically, this finding is supported by the Diffusion of Innovations Theory, which shows that interpersonal networks are useful to disseminate and strengthen innovations; the study confirms that the social diffusion mechanisms exist but are not used extensively. In practice, the knowledge transfer and better malaria prevention practices might be enhanced with the help of improved structured peer education and community dialogue.

The study equally evaluated the effectiveness of communication methods in influencing malaria prevention behaviours among pregnant women in Ado-Ekiti. Such communication strategies as health talks by nurses and doctors, clinic posters, and media campaigns were identified to be effective in

encouraging malaria prevention behaviours. On the other hand, the community meetings were not that successful. This means that, differences in the effectiveness of the different communication channels was found out. This corresponds with the findings of Atser et al. (2025) and Kalu et al. (2022) who emphasised that professionally delivered messages and organised settings are more credible and feasible. The Health Belief Model explains this impact well. Pregnant women act on health messages when they see that they are at risk and know that taking preventive steps will help. Posters and talks in clinics make the risks and benefits very clear. Also, if a woman believes she can easily take action like collecting a free mosquito net or going to the clinic, she is more likely to follow through. Similarly, the media and clinic-based interventions accelerate the prevention behaviour diffusion by increasing the social exposure thereby supporting the diffusion of innovation underpinning.

The last objective determined the barriers faced by pregnant women in Ado-Ekiti in accessing malaria prevention information. The study identified structural and contextual barriers (distance to health facilities, lack of clinic posters or messages, the inability to focus during health talks, etcetera.) as some of the major barriers to receiving malaria prevention information. On the other hand, absence of media devices, family support, or understanding the language were not as great obstacles even though they existed. These results are consistent with other studies by Akwuruoha et al. (2025) and Duru et al. (2024), which emphasize transportation issues, overcrowded clinics, and unreliable delivery of messages as the major limitation to effective malaria prevention. These barriers within the health belief model framework are perceived barriers that may decrease the risk of preventive behaviour acquisition, even at high awareness levels. These barriers are critical to knowledge translation to practise. The null hypotheses were all rejected, which proved the statistical significance of the findings in all sources of information, awareness, sharing practises and communication effectiveness, and barriers. The findings reinforce the assumption that communication channels and determinants of behaviour have complex interactions. For instance, behavioural adoption is moderated by structural barriers and the effectiveness of the communication methods in spite of the high level of awareness. This supports the theoretical predictions of the Health Belief Model as well as the Diffusion of innovations Theory where individual perceptions (susceptibility, benefits, barriers) and diffusion channels play a decisive role in preventive health behaviour adoption.

## **CONCLUSION**

This study established that pregnant women rely mostly on the media and clinic posters in receiving malaria prevention information, with awareness level being significantly high even though behavioural adoption is limited by contextual and structural barriers. The study findings is consistent with the Health Belief Model and the Diffusion of innovation theory as study findings suggested that awareness alone is inadequate to achieve behavioural change especially where perceived issues in barriers are not resolved. Responsive and effective prevention of malaria within the pregnant women fold consequently demands a barrier-focused communication, relying on multi-channel and context approaches that goes past awareness achievement to reinforcing intentional and sustained behavioural change communication and actions.

## **RECOMMENDATIONS**

- i. Health care providers, NGOs and media organisations should work together to enhance media-based and clinic-based communication channels. The use of television, radio, social media, and clinic posters with culturally relevant, clear, and visually attractive messages should be optimized to ensure that pregnant women are always provided with the correct and accessible information on malaria prevention.
- ii. Antenatal care programmes must focus on systematic health education that enhances the general awareness and detailed information such as the right dosage of IPTp, appropriate use of bed-nets and household precautionary measures.
- iii. Peer education and mentorship programmes should be implemented in the community as part of enhancing the efforts of pregnant women to share malaria prevention information with other peers, neighbours and community groups. Strengthening interpersonal networks will enhance social diffusion of preventive practices, making malaria prevention a shared community norm.

- iv. Health communicators should focus on multi-channel interventions, which involve health talks, clinic posters, and media campaigns and deemphasize less-effective ones such as community meetings. These messages should be contextual, interactive and reinforced on a periodical basis so as to acquire maximum influence on preventive behaviours in a bid to make sure that they are not only aware but also know the consequences of whatever they are doing.
- v. Policymakers and healthcare planners should counter structural and accessibility barriers by increasing the range of health messages in the form of mobile clinics, community outreach programmes, and improved distribution of visual aids. The other measures should be scheduling of the antenatal health talks at convenient times, plain language over the health messages, and incorporation of supportive counselling to overcome the socio-cultural and attentional barriers.

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