

Prevalence of Malaria and Attitudes of Patients Attending Clinic of Federal Polytechnic Bali, Taraba State, Nigeria

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ABSTRACT

Despite decades of control measures and intensive interventions, malaria continues to cause extensive morbidity and mortality throughout the widespread regions where it is endemic. The aim of this study is to assess the prevalence of malaria among Patients attending Federal Polytechnic clinic Bali, Taraba state, Nigeria. The patient fingers were punched randomly with lancet then a droplet of blood was put on card test strip, two to three drops of buffer was added and the result was read after twenty minutes. The result showed highest infection rate among participants among the age group of 31-40years, followed by 21-30years and the lowest been participants who are 41 and above. It also showed highest infection rate among participants who had attended tertiary institution, 55.3% (47/85), followed by those who attended secondary schools 21.2% (18/85), and the lowest been participants who had attended primary school, 11.8% (10/85) and those who had none formal Education 11.8% (10/85) with a statistically non-significant difference ($X^2=4.000$; $P>0.05$). It also showed higher infection rate among participants who are married, 52.9% (45/85), single participants had 27.1% (23/85), as well as those who were divorced 11.8% (10/85), and the lowest been participants who are widowed 8.2% (7/85) with a statistically non-significant difference ($X^2=4.000$; $P>0.05$). higher infection rate among participants who are males, 50.6% (12/24) and the lowest been females, 49.4% (8/22) with a statistically non-significant difference ($X^2=4.000$; $P>0.05$) was observed.

Keywords: Malaria, prevalence, Bali, Attitudes, Patients.

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I. INTRODUCTION

Malaria is a serious and sometimes a fatal disease caused by a *Plasmodium* parasite that commonly infects *Anopheles* mosquito which feeds on humans. People who get malaria are typically, very sick with high fevers, shaking, chills, and flu-like illness. Because malaria causes so much illness and death, the disease is a great drain on many national economies (Degif, 2017).

According to World Health Organization (2015) estimates, globally, there were 212 million cases of malaria and 429,000 deaths. African Region continues to carry a disproportionately high share of the global malaria burden. In 2015, the region home to 90% of malaria cases and 92% of malaria deaths. Some 13 countries... mainly in sub-Saharan Africa... account for 76% of malaria cases and 75% deaths globally. In areas with high transmission of malaria, children under five are particularly susceptible to infection, illness and death, more than two thirds (70%) of all malaria deaths occur in this age group between 2010 and 2015, the under-five malaria death rate fell by 29% globally. (WHO, 2015; World Malaria Report, 2020-22)

Despite decades of control measures and intensive interventions, malaria continues to cause extensive morbidity and mortality throughout the widespread regions where it is endemic There are six species that commonly cause malaria infections in humans: *Plasmodium falciparum*, *P. vivax*, *P. ovale* (two sympatric species), *P. malariae*, and *P. knowlesi*; and recently *P. cynomolgi* has been implicated. The vast majority of research has been directed towards *P. falciparum*, which is the primary contributor to disease burden throughout sub-Saharan Africa. (Sama, ., Dietz, and Smith, 2016).

Nigeria carries a disproportionately high share of the global malaria burden. In 2015, the region was home to 90% of malaria cases and 92% of malaria deaths. Children under five years of age are particularly vulnerable, accounting for an estimated 70% of all malaria deaths. Diagnostic testing enables health providers to rapidly detect malaria and prescribe life-saving treatment.

Malaria epidemics remain a major public health problem for the world population. Despite the availability of the malaria control measures and intervention, the rate of patients suffering from malaria Disease is still unacceptably high. (MOH, 2006). Malaria control and interventions have been implemented and in the recent past and intensified as an effort to attain the World Health Assembly of Roll Back Malaria, and

Millennium Development universal targets with the aim of reducing and interrupt disease transmission in sub-Saharan Africa. Worse still, malaria continues to be the leading cause of child mortality and morbidity in spite of government, NGOs and the private sector’s interventions to ensure that individual have access, own and sleep under Insecticides Treated Net (ITNs) (WHO, 2017,2018, 2020)

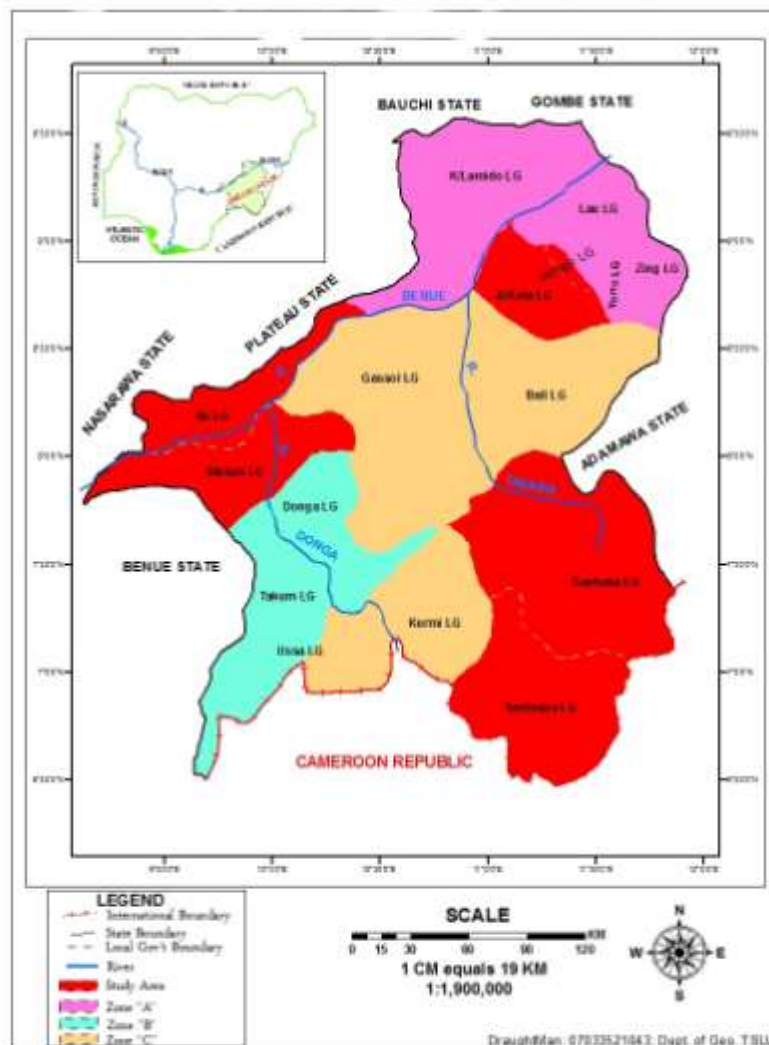
This verifies that there could be several reasons for this situation including the deficiencies in the health system that leads to lack of access to malaria control interventions and low effectiveness of these interventions than expected as observed by Lamidiet *al.* (2019) In view of the above this research tends to study the malaria prevalence among out patent attending Federal polytechnic clinic Bali Taraba State.

The study therefore, seek to find the prevalence of Malaria among the outpatient attending Federal Polytechnic Clinic Bali. It is hoped that, the outcome will be useful in preventive medicine.

II. MATERIALS AND METHODS

Study area

Bali Local Government Area is an active LGA in the state with its headquarters in Bali town, with the council are comprising of Bali, Badokoshi, Gang Dole, Gang Mata, Ganglari, Gangtiba, Suntai, Takalafiya, Kaigama and Maihula. Bali Local Government is made up of legislative councils who are responsible for the social and economic development of the towns and communities under its jurisdiction in the lowest levels, consisting of the Executive Chairman, the Councilors and other political subordinates thus existing under Taraba state central senatorial zone with its capital administrative headquarters in Bali town. The majority of people living in Bali are farmers little are civil servants in the local government.



Sample Population

The sample population for prevalence of malaria parasite was the total number of staff and students attending federal polytechnic clinic Taraba State Bali. Population of staff and students attending federal polytechnic clinic Bali Taraba State is one hundred and ten (110) persons.

Sample Size

The size will be determined using Yamane (1964) formular.

Thus

(b)

$$n = \frac{N}{1+n(e)^2}$$

Where;

n = sample size

N = the target population (110)

e = margin of error (5%)

$$= \frac{110}{1+110(0.05)^2}$$

$$= \frac{110}{1+5.0} = \frac{110}{6} = 18.33$$

Sampling Size = 333

Sampling Techniques

Random sampling was used to select subject, questionnaire was also administered to all subject enrolled in the study.

Primary Data

Therefore, the data was obtained through distributed questionnaires designed for this purpose, in addition, oral interview was conducted briefly to supplement the information derived from the questionnaire. A pre-tested questionnaire was administered to the participants in order to collect information on their demographic, socioeconomic, and environmental factors, and the health status, as well as their KAP towards malaria. Information was collected from the respondents via face-to-face interviews conducted by trained research assistants. Both assistants will be told of the purpose of the study and the way in which to administer the questionnaire.

Laboratory Examination (Rapid Diagnostic Test, RDT)

Rapid Diagnostic Test was used in this study. The patient fingers were punched with lancet then a droplet of blood was put on card test strip, two to three drops of buffer was added and the result was read after twenty minutes. If one line appears on the strip test card, then the patient is negative but if two lines appears the patient is positive.

Data Analysis

The data generated on was analyzed using statistical programme for social sciences (SPSS) 17.0 Window versions. The statistical significance of variables was estimated using Chi-square test. Pearson correlation analysis was used to establish possible correlation of prevalence with parity, age, trimester. P-values of equal to or less than 0.05 was taken as measures of significance.

Ethical Approval/ Permission

A letter of introduction from the Department of Biological Science Taraba State University was used in survey visits to the hospitals to obtain permission from the hospitals' authorities. During the visits, the management, health workers in charge of laboratory scientists were informed on the nature and objectives of the study. The consent of both management of Federal Polytechnic Bali Clinic, and the patients was sought and obtained.

III. RESULT

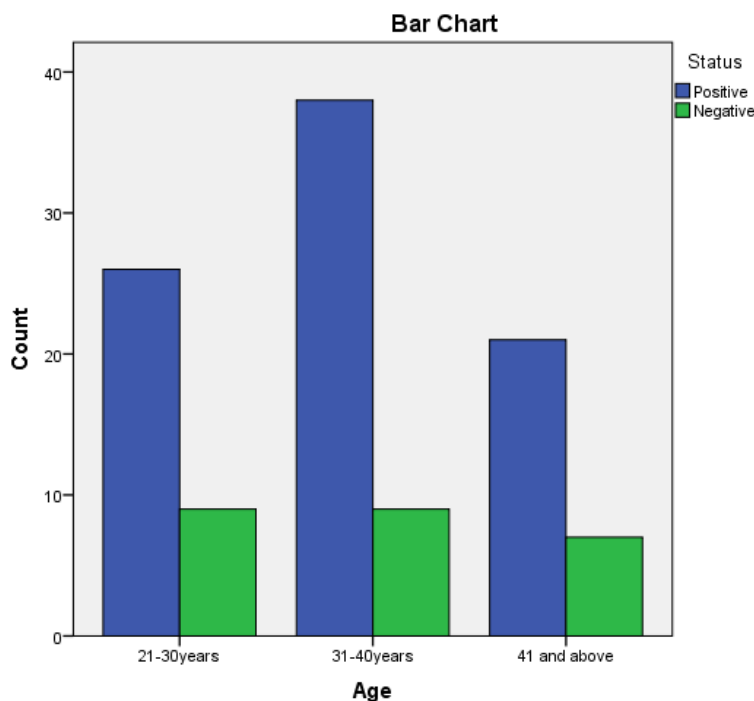
Prevalence of Malaria Parasite Infection based on Age

Table 1 describes Occurrence of Malaria Parasite Infection Based on age of study participants which showed higher infection rate among participants who are among the age group of 31-40years, 30.6% (26/85),

followed by 21-30years, 44.7% (38/85), and the lowest been participants who are 41 and above 24.7% (21/85), with a statistically non-significant difference ($X^2=4.000$; $P>0.05$) as seen below.

Age				
		Status		Total
		Positive	Negative	
Age	21-30years	26	9	35
	31-40years	38	9	47
	41 and above	21	7	28
Total		85	25	110

Source: Field Work, 2021.



Source: Field Work, 2021.

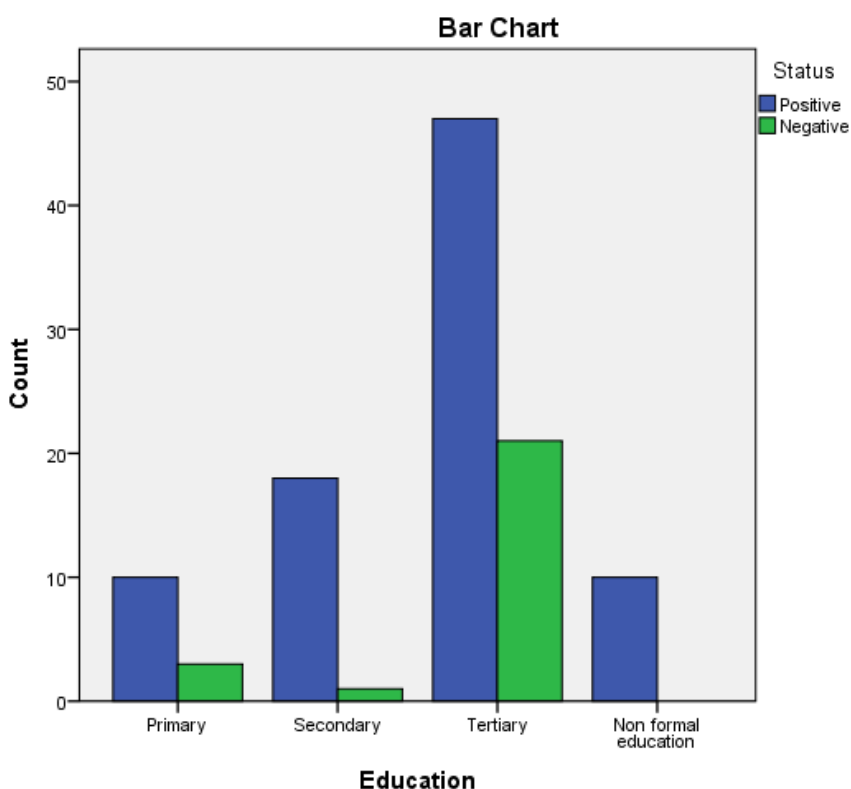
Prevalence of Malaria Parasite Infection based on Educational Background

Table 2 describes Occurrence of Malaria parasite Infection Based on educational background of study participants which showed higher infection rate among participants who had attended tertiary institution, 55.3% (47/85), followed by those who attended secondary schools 21.2% (18/85), and the lowest been participants who had attended primary school, 11.8% (10/85) and those who had none formal Education 11.8% (10/85) with a statistically non-significant difference ($X^2=4.000$; $P>0.05$) as seen below.

Table 2: Showing the Educational qualification of the respondents.

Education				
		Status		Total
		Positive	Negative	
Education	Primary	10	3	13
	Secondary	18	1	19
	Tertiary	47	21	68
	Non formal education	10	0	10
Total		85	25	110

Source: Field Work, 2021.



Source: Field Work, 2021.

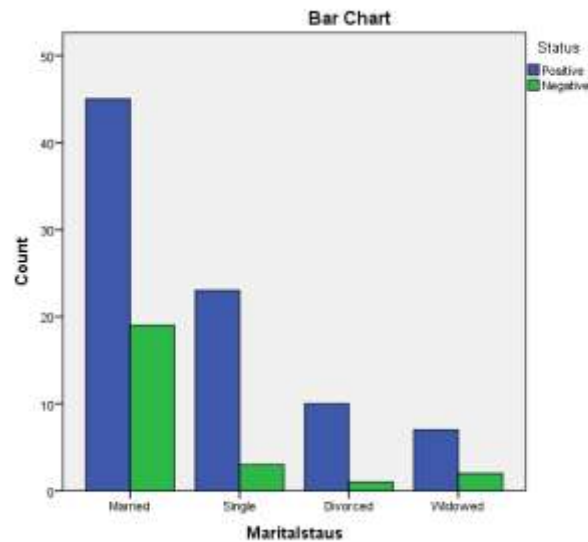
Prevalence of Malaria Parasite Infection based on Marital Status

Table 3 describes Occurrence of Malaria parasite Infection Based on Marital Status study participants which showed higher infection rate among participants who are married, 52.9% (45/85), single participants had 27.1% (23/85), as well as those who were divorced 11.8% (10/85), and the lowest been participants who are widowed 8.2% (7/85) with a statistically non-significant difference ($X^2=4.000$; $P>0.05$) as seen below.

Table 3: Showing the Marital Status of the respondents.

Marital status				
		Status		Total
		Positive	Negative	
Marital status	Married	45	19	64
	Single	23	3	26
	Divorced	10	1	11
	Widowed	7	2	9
Total		85	25	110

Source: Field Work, 2021.



Source: Field Work, 2021.

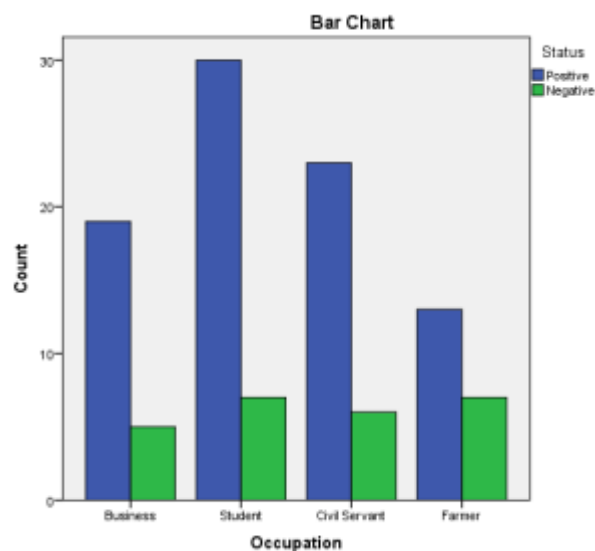
Prevalence of Malaria Parasite Infection based on Occupation

Table 4 describes Occurrence of Malaria Parasite Infection Based on occupation of study participants which showed lowest infection rate among participants who are farmers, 15.3% (13/85), civic servants were 27.1% (23/85) while business people were 22.4% (19/85) and the higher been participants who were students 35.3% (30/85) with a statistically non-significant difference ($X^2=4.000$; $P>0.05$) as seen below.

Table 4: Showing the Occupation of the respondents.

Occupation				
Count				
		Status		Total
		Positive	Negative	
Occupation	Business	19	5	24
	Student	30	7	37
	Civil Servant	23	6	29
	Farmer	13	7	20
Total		85	25	110

Source: Field Work, 2021.



Source: Field Work, 2021.

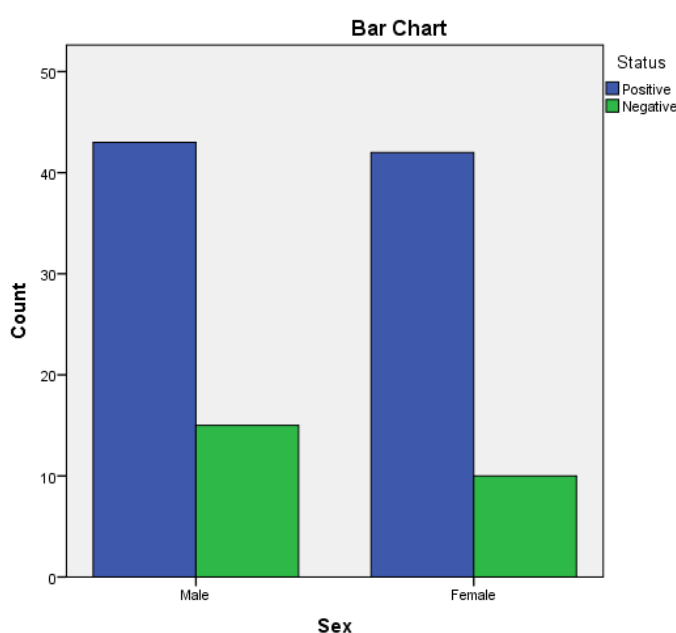
Prevalence of Malaria Parasite Infection based on Sex

Table 5 describes Occurrence of Malaria parasite Infection Based on sex of study participants which showed higher infection rate among participants who are males, 50.6% (12/24) and the lowest been females, 49.4% (8/22) with a statistically non-significant difference ($X^2=4.000$; $P>0.05$) as seen below.

Table 5: Showing the Sex of the respondents.

Sex				
		Status		Total
		Positive	Negative	
Sex	Male	43	15	58
	Female	42	10	52
Total		85	25	110

Source: Field Work, 2021.



Source: Field Work, 2021.

Respondents showing Knowledge and attitude regarding signs/symptoms of Malaria preventive methods of Malaria, Malaria treatment and Laboratory Result etc.

Over 70% of the respondents attributed staying late outside the home can contribute to Malaria infection against the last than 30%.

60 (54.5%) of the study respondents believe that spray the room with insecticides can greatly prevent Malaria infection followed by Using Mosquito nets 30 (22.7%), using repellent 15 (13.6%) and others were 10 (9.1%).

22 (20%) of the respondents had no grasses and stagnant water around their home against 88(80%) who had grasses and stagnant water around their homes.

90 (81.8%) respondents had insecticides treated mosquito nets out of while only 60 (54.5%) makes uses of ITN against 20(18.2%) of which 50 (45.5%) doesn't sleep under ITN.

A small percent of the respondents goes for Malaria treatment only once or twice a year respectively, 12(10.9%), 18 (16.4%). The greater percent treated Malaria every month 54 (49.1%) and twice a week 26 (23.6%).

The Malaria Parasite laboratory test results showed 2 (1.8%) invalid, 31 (28.2%) negative and 77(70.0%) positive results.

Table 6 showing Knowledge and attitude of respondents regarding signs/symptoms of Malaria preventive methods of Malaria, Malaria treatment and Laboratory Result

Variable	Category	Frequency
Do you stay late outside?	Yes	78 (70.9%)
	No	32 (29.1%)
How do you prevent Malaria?	Mosquitoes Net	25 (22.7%)
	Spray room with Insecticide	60 (54.5%)
	Use of Repellent	15 (13.6%)
	Others	10 (9.1%)
Do you have grasses / stagnant water around houses?	Yes	88 (80.0%)
	No	22 (20.0%)
Do you have Insecticide treated Nets (ITN)?	Yes	90 (81.8%)
	No	20 (18.2%)
Do you Sleep Under Insecticide treated Nets (ITN) Mosquitoes Net?	Yes	60 (54.5%)
	No	50 (45.5%)
How often do you go for Malaria treatment?	Every 2 weeks	26 (23.6%)
	Monthly	54 (49.1%)
	Twice a year	18 (16.4%)
	Once a year	12 (10.9%)
Laboratory Result	Positive	77 (70.0%)
	Negative	31 (28.2%)
	Invalid	2(1.8%)
Source of information	Family member	7(1.8%)
	Neighbor	3(2.7%)
	Newspaper	3(2.7%)
	Radio	6(5.5%)
	TV	10 (9.1%)
	Internet	20 (18.2%)
	Patent Drug Store	30 (27.3%)
	Clinic/ Hospital	20 (18.2%)
	Poster/ Bill Board	5 (4.5%)
	School	4 (3.6%)
Church/ Mosque	2 (1.8%)	
The following are signs/symptoms of malaria	Chills	30 (27.3%)
	Dizziness	17 (15.5%)
	Elevated Temperature	38 (34.5%)
	General Body Weakness	15 (13.6%)
	Vomiting	4 (3.6%)
	Sweating	3 (2.7%)
I don't know the signs and symptoms of Malaria	3 (2.7%)	

Source: Field Work, 2021.

IV. DISCUSSION CONCLUSION AND RECOMMENDATIONS

Discussion

This study found that age, gender, educational level, and household monthly income had significant influences on having adequate knowledge about malaria.

Younger respondents showed a greater level of knowledge about malaria transmission and prevention than did adults (aged 18 and older), which could be attributed to schools or media, especially television. Similarly, males had substantially higher levels of knowledge about malaria transmission, symptoms, and prevention, which could be because of their higher exposure, as well as certain behavioral and cultural factors. In Nigeria, the prevalence of malaria is highest among pregnant women compared to other groups [Ohalet et al., 2011, Oladeinde et al., 2012, Gunn et al., 2015]. The prevalence is in line with the study of Lamidi (2013) at General Hospital Bali, Taraba state

Conclusion

Bali community is endemic for malaria transmission because of the favourable ecological conditions prevailing in the area. The attitudes of the inhabitants as shown by the study population also contribute to the transmission of the disease

Recommendations

1. There is need for health education programs to improve and facilitate the health of citizens relative to malaria transmission.
2. applying social marketing through the use of various communication tools could increase awareness within the community.

3. Educational strategies should fill the gap of pregnant women not utilizing malaria preventive measures. Such programs should plan to empower the community with preventive tools to combat the malaria disease that will in turn reduce the burden of malaria within the community particularly among pregnant women.,

4. Identifying and addressing the socioeconomic differences, and determining factors that contribute to barriers to the utilization of preventive measures leading to the prevalence of malaria will improve the health of the community.

5. Policy makers can form partnerships with community leaders to determine the needs of the community. Understanding these needs can address underlying social problems on an individual, community,

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