International Journal of
Health, Medicine and Nursing Practice
(IJHMNP)

Effects of Health Education on Attitude Towards Malaria Prevention Among Pregnant Women in Lagelu Local Government Area, Oyo State, Nigeria

CARI Journals

International Journal of Health, Medicine and Nursing Practice
ISSN 2710-1150 (Online)
Vol.5, Issue No.1, pp 40 – 50, 2023
www.carijournals.org

Effects of Health Education on Attitude Towards Malaria Prevention Among Pregnant Women in Lagelu Local Government Area, Oyo State, Nigeria

***Adeniji, Oluwakemi Iyabo (MPH, PGDE, BNSc),**

Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria.

[1]Olubiyi, Simeon Olukayode (PhD, MSc., BSc., RN),

University of Ilorin, Ilorin, Kwara State, Nigeria.

[2] Adeniji Adetunji Oladeni (MBBS, FWACS, FMCOG, FICS, MD),

Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria.

Corresponding Authors E-mail: adenijioluwakemi87@gmail.com

Abstract

Purpose: The study examined the effects of health education on attitude towards malaria prevention among pregnant women in Lagelu Local Government Area, Oyo State, Nigeria.

Methodology: A quasi-experimental design was adopted, and the study population were pregnant women attending antenatal clinics. A sample size formula was used to derive 90 respondents. A multistage sampling technique was used to select respondents for the study. The instrument for data collection was a structured questionnaire. The collection of data was done in three phases: the pre-intervention was for one week; the immediate post-intervention at 6th week (intervention was between the 3rd to 6th week) and the post-intervention after the 8th week follow-up. Descriptive and inferential statistics were used for data computation.

Findings: The results revealed that the attitude of pregnant women towards malaria prevention was low at the pre-intervention phase for both the experimental and control groups. However, the attitude changed significantly at the immediate and post-intervention phases for the experimental group but remain the same for the control group.

Unique Contribution to Theory, Policy and Practice: It was recommended that health education should be given to pregnant women at the antenatal clinics.

Keywords: *Attitude, Effects, Health education, Malaria prevention, Pregnant women*

INTRODUCTION

Malaria is a parasitic disease with statistical records of 229 million cases and 409,000 deaths in 2019 (WHO, 2019). It is a major public health problem affecting the sub-Saharan Africa having 93% of the burden of the disease (WHO, 2019). It is a disease that is difficult to control due to its adaptable nature (NIH, 2011) and has its host in human beings (Konlan, *et al*., 2019). During pregnancy, malaria results in complications such as maternal anaemia, spontaneous abortions and stillbirths, among others (WHO, 2017).

Among the world population of 7.8 billion, 3.2 billion people are at risk of being infected with malaria parasites and having full blown malaria (WHO, 2019). Malaria is caused by a *protozoon* of the *genus Plasmodium* (*P).* There are four main types of the *Plasmodium* species. These are (p) falciparum, *vivax*, *ovale*, and *malariae*. The *P. falciparum* is the most severe and life-threatening form of the causative agent. It accounted for 99.7% of the estimated malaria cases in the African Region; 62.8% of cases in the South-East Asia regions; 71% in the Eastern Mediterranean and 65% in the Western Pacific (WHO, 2019). In 2019, (WHO, 2019) statistics on malaria in some countries are as follows: Nigeria (25%), the Democratic Republic of the Congo (12%), Mozambique (4%), Cote d'Ivoire (4%) and Uganda (5%). In Nigeria, malaria has been and remains endemic, affecting the under-5 children and pregnant women more severely than other population groups (WHO, 2019).

Twenty-five million pregnant women are currently at the risk for malaria WHO (2019). This accounts for 10,000 maternal and 200,000 neonatal deaths per year. Number of women living in malaria endemic areas and who gets pregnant is one hundred and twenty-five million (Dellicour *et al*., 2016). These women require protection from being infected with malaria parasites which can result in deaths for themselves as well as their offspring. There are three times more likelihood of pregnant women having malaria in comparison with the non-pregnant women (Desai *et al.*, 2018). This is due to factors such as immunocompromised state of pregnancy and placental sequestration of infected erythrocytes. The *primigravidas*, adolescents and women infected with Human Immunodeficiency Virus (HIV) are found in endemic areas for malaria (Desai *et al.*, 2018).

Malaria is a unique disease compared to other diseases as its prevention is basically dependent on two main methods which are use of antimalarial drugs and protection against the bites of mosquitoes (CDC, 2021). The attitudinal disposition on malaria prevention are associated with cultural beliefs and this has influenced the effectiveness of control practices (Konlan, *et al.*, 2019). Behavioral and non-behavioral factors contribute significantly to the prevalence of malaria. The behavioral factors include cultural practices, which promotes mosquito breeding, and failure to use technological-driven means of treatment, control and prevention of malaria promptly. The non-behavioral factors include geographical or ecological peculiarities, the availability of mosquitoes and the presence of plasmodia.

Several interventions on malaria prevention especially among pregnant women has been carried out by governmental and non-governmental agencies, but none of it had been able to achieve a total success (WHO, 2019). This includes the control of malaria with the creation of

the Roll Back Malaria (RBM) Partnership in 1998 (WHO, 2021), in conjunction with all nations that agreed to global malaria targets as part of the Millennium Development Goal 6 (MDG 6) which is to combat HIV/AIDS, malaria and other diseases.

The Oyo State Government in August 2021 began the distribution of ITNs to the 33 Local Government Areas within the state (Premium Times, 2021). This was to improve the health of mothers and children as it was noted that malaria was still a public health challenge in Oyo State and Nigeria. The distribution of the ITNs is a critical component of the ongoing effort to end malaria in Nigeria, which results in nearly 96,000 deaths per year (Business Day, 2021). The main goal of the distribution was to increase awareness of communities within the state on appropriate knowledge, attitude and skills in preventing malaria. In Lagelu Local Government Area, malaria is the most prevalent disease seen in the health facilities (more than 100 cases in a month) and this is affected by the habitat, population as well as the behaviour of the people in the community (Patients' health records, 2021).

Health education which is an important component in disease control program is a combination of programme elements or strategies that are used in implementing health promotion and disease prevention programs (Sabin, *et al*., 2018). Its practices enable control of malaria especially when it is focused on identified gaps in the communities. The main aim of health education is to achieve health for target populations. It presents information to these target populations on particular health topics including the health benefits and threats that they may face. Also, it provides tools to build capacity and support behavioral changes in an appropriate setting. This enables provision of learning experiences to participants on health topics. Health education planning requires complex skills, which involves careful preparation, logical thinking and creativity. Its framework is theory-driven, evidence-based, feasible and valuable.

Health education strategies assist in improving awareness of malaria and this has aided reduction in cases of some areas in developing countries by as much as 20% (Farag, et al., 2018). In developing world, where malaria is common, control measures have been successfully used to decrease the incidence of malaria. Having knowledge on malaria through health education enables identification of the disease at the early stages and stops it from becoming fatal. Also, health education informs people on control of breeding sites of mosquitoes in the environment, thus reducing the risk of having malaria.

The characteristics of health education strategies include a community needs assessment. This is done to identify community capacity, resources, priorities and needs. This is followed by participation of the target population in the health programmes to be carried out. Learning

activities are planned towards increasing participants' knowledge and skills and then the planned programmes implementation. This implementation occurs in a setting that is easy for the participants and the presentation of information is dependent on the resources that are culturally appropriate and tailored to the target populations to ensure cultural competence (Rural Health Information, 2018). Some of the health education programs to prevent malaria among pregnant women include health education and counselling with the use of insecticide treated nets (Sabin, et al., 2018). Other forms of health education program are intermittent

preventive therapy of malaria, mass drug administration, indoor residual spraying, larva control and mass fever treatment (NNDSS, 2018).

In a study by Aberese-Ako, *et al*., 2019 in Ghana on health system, socio-cultural, economic, environmental and individual factors influencing bed net use in the prevention of malaria in pregnancy; it was revealed that it influenced the use of long-lasting insecticide treated nets. In Kenya, factors which influenced the use of insecticide treated nets include religion, education and income (Choonara, *et al*., 2015). Tar-Attia (2018), in another study deduced that certain structural factors, such as poverty, insufficient education on malaria, corruption, and poor trust in healthcare establishment are contributory factors to malaria. In studies by Obol *et al*., 2020; Amusan *et al*., 2017, it was reported that there were misconceptions on transmission of malaria which has been having adverse effects on its control. Taylor, *et al*., 2017; Olapeju, *et al*., 2018) have indicated that access to ITNs is a major drive to its use but majorly its use is influenced by individual, household and community factors. The individual factors include the socio-demographic factors such as age, gender, education level and in addition to this, are the beliefs, ITNs preferences, knowledge and risk perception. At the household level, the determinants include household composition, the size of the house and the sleeping arrangements. The community factors are the environmental conditions and the seasons for malaria.

The study examined the effects of health education intervention on attitude towards malaria

prevention among pregnant women in Lagelu Local Government Area, Oyo State, Nigeria. This study specifically:

1. assess the baseline attitude towards malaria prevention among pregnant women

   attending antenatal clinics in Lagelu Local Government Area, Oyo State, Nigeria;

2. examine the attitude towards malaria prevention among pregnant women at

   immediate post intervention for experimental and control groups in Lagelu Local Government Area, Oyo State, Nigeria; and

3. analyse the attitude towards malaria prevention among pregnant women at 8th week

   follow-up for experimental and control groups in Lagelu Local Government Area, Oyo State, Nigeria.

Research questions

The following research questions were raised to guide the study:

1. What is the baseline attitude towards malaria prevention among pregnant women

   attending antenatal clinics in Lagelu Local Government Area, Oyo State, Nigeria?

2. What is the attitude towards malaria prevention among pregnant women at

   immediate post intervention for experimental and control groups in Lagelu Local Government Area, Oyo State, Nigeria?

3. What is the attitude towards malaria prevention among pregnant women at 8th week follow-up for experimental and control groups in Lagelu Local Government Area, Oyo State, Nigeria?

Research hypotheses

H01: There is no significant difference in the respondents' attitude towards malaria prevention between baseline and immediate post intervention.

H02: There is no significant difference in the respondents' attitude towards malaria prevention between immediate post intervention and 8th week follow-up.

METHODOLOGY

The research design adopted for this study was a quasi-experimental design. The population of interest in this study were pregnant women who were attending antenatal clinics in Lagelu Local Government Area in Oyo State, Nigeria. There were two study areas, Alegongo Primary Health centre (experimental group) and Iyana Church Primary Health centre (control group). The sample size formula according to Taro Yamane (1976); was used to derive 90 respondents. A multistage sampling procedure was used to select the respondents for the study. The first stage used simple random sampling to select health care facilities offering antenatal care services within Lagelu LGA, Oyo State. The second stage was selection of two antenatal clinics within the LGA using purposive sampling. The third stage included selection of pregnant women during the antenatal clinic days of the two clinics through purposive sampling. Those that were selected were the ones in their first or second trimesters with no co-morbidities. Also, those that indicate willingness to participate and gave their consent.

A full explanation of the study was given to the proposed respondents. Therefore, based on the calculation of the sample size, 90 respondents were used for the study. The instrument used for the pre and post-intervention was a structured questionnaire which was

divided into two sections (sections A-B). Section A sought for the socio-demographic data of the respondents while section B measured attitude towards malaria prevention. The

face and content validity of the instrument was ensured by experts in Public Health. The reliability of the instrument was ensured through test re-test method and was analysed at Cronbach alpha of 0.83.A pre-tested and validated instrument was used for the collection of the data. The data were collected with the help of two research assistants who would have been trained properly for a week on collection of data. The collection of data was done in three phases: the baseline or pre-intervention phase which was for one week; the immediate post-intervention was for four weeks (intervention was between the 3rd to 6th week), and the third phase which was the outcome was for a week.

Descriptive and inferential statistics were used for data computation. The data collected were analyzed using the frequency tables, the summaries of descriptive statistics and independent t-

test. All statistical tests was set at p = 0.05 level of significance which was used to accept or reject the hypotheses.

RESULTS

Objective 1: Baseline level of attitude towards malaria prevention

The pregnant women's attitude towards malaria prevention practices before intervention was measured on a 44-point rating scale which inquired about attitude towards malaria prevention practice. The mean ± SD scores for the attitude towards malaria prevention practices in the experimental group and the control group were 24.90 ± 1.97 and 25.48 ± 1.92 respectively.

The categorization into negative (0-27) and positive (28-55) of attitudinal disposition among the groups showed that, only 8.8% of the pregnant women in the control group had a positive attitude towards malaria prevention practices at baseline. (Table 1)

Attitude towards malaria prevention practices	**Maximum point scale of measure**	**Experimental Group F (%)**	**Control Group F (%)**
Negative (0-27)	44	40 (88.8)	41 (91.1)
Positive (28-55)		5 (11.1)	4 (8.8)
Mean ±SD		**24.90 ± 1.97**	**25.48 ± 1.92**

Objective 2: Attitude towards malaria prevention at immediate post-intervention

The pregnant women's attitude towards malaria prevention practices at immediate post intervention was measured on a 44-point rating scale which inquired about attitude towards malaria prevention practice. The mean ± SD scores for the attitude towards malaria prevention practices in the experimental group and the control group were 49.18 ± 2.81 and 27.40 ± 2.32 respectively.

The categorization into negative (0-27) and positive (28-55) of attitudinal disposition among the groups showed that, all the pregnant women in the experimental had a positive attitude while only 13.3% of the pregnant women in the control group had a positive attitude towards malaria prevention practices at immediate post-intervention (Table 2).

Attitude towards Malaria Prevention practices	**Maximum Point Scale of Measure**	**Experimental Group F (%)**	**Control Group F (%)**
Negative (0-27)	44	-	39 (86.6)

Positive (28-55)		45 (100.0)	6 (13.3)
Mean ±SD		**49.18 ± 2.81**	**27.40 ± 2.32**

Objective 3: Attitude towards malaria prevention at immediate post-intervention at 8th week follow-up

The pregnant women's attitude towards malaria prevention practices at 8th week follow-up was measured on a 44-point rating scale which inquired about attitude towards malaria prevention practice. The mean ± SD scores for the attitude towards malaria prevention practices in the experimental group and the control group were 48.95 ± 2.50 and 27.23 ± 2.13 respectively.

The categorization into negative (0-27) and positive (28-55) of attitudinal disposition among the groups showed that, all the pregnant women in the experimental had a positive attitude while only 15% of the pregnant women in the control group had a positive attitude towards malaria prevention practices at 8th week follow-up (Table 3).

Attitude towards Malaria Prevention practices	**Maximum Point Scale of Measure**	**Experimental Group F (%)**	**Control Group F (%)**
Negative (0-27)	44	-	39 (86.6)
Positive (28-55)	-	45 (100.0)	6 (13.3)
Mean ±SD		**48.95 ± 2.50**	**27.23 ± 2.13**

Test of hypotheses

H01: There is no significant difference in the respondents' attitude towards malaria prevention between baseline and immediate post intervention

A paired *t*-test was conducted to determine if the total mean difference observed in the patients' level of attitude towards malaria prevention practices due to the intervention was statistically significant. As shown in table 4, the intervention program had statistically significant effect on the respondents' level of attitude in the experimental group (t_{39} = 44.65, p = 0.000) but no statistically significant difference in the level of attitude towards malaria prevention practices (t_{39} = 0.367, p = 0.7151) in the EG. The intervention group had the larger effect size (ES) of 7.059 (8.646 to 5.465). The results showed that there was significant difference in the respondents' level of attitude towards malaria prevention practices between baseline and immediate post-intervention. Therefore, based on these values the null hypothesis is rejected.

Variables	Groups	Mean Diff	S. D	S. E	df	*t*	ES (95%Cl)	*p*-value
Level of attitude towards malaria prevention practices	Experimental	25.275	3.58	0.57	39	44.65	7.059(8.646 to 5.465)	0.000*
	Control	0.925	1.58	0.25	39	0.367	0.581 (0.914 to .243)	0.7151

***Significant at <0.05**

H02: There is no significant difference in the respondents' attitude towards malaria prevention between immediate post intervention and 8th week follow-up

A paired *t*-test was conducted to determine if the total mean difference observed in the patients' level of attitude towards malaria prevention practices between immediate post-intervention and 8th week follow-up was statistically significant. As shown in table 5, the increase in mean score at the immediate post- intervention was sustained at the follow-up period as there was no difference in their attitude at the follow-up period in the experimental group ($t_{39} = 1.857$, $p = 0.057$). Also, in the control group, there was no statistically significant difference in the level of attitude towards malaria prevention practices between immediate post-intervention and 8th week follow-up ($t_{39} = 1.740$, $p = 0.090$). The results showed that there was no significant difference in the respondents' level of attitude towards malaria prevention practices between immediate-post intervention and 8th week follow-up. Therefore, based on these values the null hypothesis was not rejected.

Variables	Groups	Mean Diff	S. D	S. E	df	*t*	ES (95%Cl)	*p*-value
Level of attitude towards malaria prevention practices	Experimental	0.225	0.66	0.10	39	1.857	0.000(0.310 to 0.310)	0.057
	Control	0.175	0.64	0.10	39	1.740	0.193 (0.121 to .505)	0.090

DISCUSSION

The present study revealed that respondents' attitude towards malaria prevention among pregnant women in Lagelu Local Government Area, Oyo State was negative at the pre-

intervention stage for both the experimental group and the control group. The attitude increased significantly and was positive at the immediate post-intervention and at the 8th week follow-up for the experimental group while the control group remained the same. This finding was in line with the study by Tijani, 2016 on malaria prevention practices among pregnant mothers in Osogbo, Nigeria which revealed that there were socio-cultural misconceptions about sleeping under ITNs (18.8%).

On hypotheses testing, it was revealed that there were significant differences in the respondents' towards malaria prevention among pregnant women in Lagelu Local Government Area, Oyo State between baseline and immediate post intervention. The intervention group had the larger effect size (ES) of 7.059 (8.646 to 5.465). It was however revealed that there were no significant differences in the respondents'attitude towards malaria prevention between immediate post-intervention and 8th week follow-up. This implied that the increase in mean scores at the immediate post-intervention was sustained at the 8th week follow-up.

CONCLUSION

The study concluded that adequate health education can improve attitude towards malaria prevention as demonstrated in the experimental group. It is safe to conclude that health education is needed to influence a change in behaviour towards malaria prevention.

Recommendations

1. Health workers should be for in-service training on malaria prevention.

2. Health education sessions on malaria prevention should be organized regularly for pregnant women attending antenatal clinics.

Contribution to knowledge

Findings from this study increased the importance of health education as a potential tool in health campaigns to improve attitude towards malaria prevention among patients. Obtained results from this study further validate the claim that interventions through health education are successful in influencing behavioral change.

References

Aberese-Ako, M., Magnussen, P., Ampofo, G. D. & Tagbor, H. (2019). Health system, socio-cultural, economic, environmental and individual factors influencing bed net use in the prevention of malaria in pregnancy in two Ghanaian regions. *Malaria Journal,* 18 (1), 363

Amusan, V.O., Umar, Y.A. & Vantsawa, P.A. (2017). Knowledge, attitudes and practices on malaria prevention and control among private security guards within Kaduna Metropolis, Kaduna State-Nigeria. *Science Journal Public Health*,5:240–5

Business Day,August, 2021. https://businessday.ng

CDC. National Notifiable Diseases Surveillance System, (2021). wwwn.cdc.gov.

Choonara, S., Odimegwu, C. O. & Elwange, B. C., (2015). Factors influencing the usage of different types of malaria prevention methods during pregnancy in Kenya. *African Health Science*, 15 (2), 413-9

Dellicour, S., Hill, J. Bruce, J.,Ouma, P.Marwanga, D., Otieno, P., Desai, M., Hamel, M. J., Kariuki, S. & Webster, J. (2016). Effectiveness of the delivery of interventions to prevent malaria in pregnancy in Kenya. *Malaria Journal* 15: 221 PLos Med., 7(1):e1000221

Desai M, Hill, J., Fernandes, S., Walker, P, Pell, C., Gutman, J., Kayentao, K., Gonzalez, R., Webster, J., Greenwood, b., Cot, M. & Kuile Ter, F. O. (2018). Prevention of malaria in pregnancy. *Lancet Infectious Disease*, 7:93–104

Farag, E., Bassal, D., Chehab, M. A. H., Al-Dashan, A., Bala, M., Gatesan, N., Al Abdulla, Y. A., Al Thosi, M., Sultan, A. & Al-Ronaita, H. (2018). Epidemiology of malaria in the state of Qatar. *Medutarrenian Journal of Haematology and Infectious Disease*, 10(1): e2018250. https://ds.doi.org/10.4084/M3HID.2018.050

Konlan,D.K., Amu, H., Konlan, K.D & Japion, M. (2019). Awareness and Malaria Prevention Practices in a Rural Community in the Ho Municipality, Ghana. *Open Access Journal*, Article ID 9365823, 8 pages

National Institute of Health, 2011

National Notifiable Disease Surveillance System (2018). How to reduce malaria's impact.

www.cdc.gov Premium Times, August 17, 2021. https://www.premiumtimesng.com

Obol, J., David, L.K. & Christopher, G. O.(2020). Knowledge and misconceptions about malaria among pregnant women in a post-conflict internally displaced persons' camps in Gulu District, Northern Uganda. *Malaria Research and treatment*, 1-7

Olapeju, B., Choriyyah, I., Lynch, M., Acost, A., Blaufuss, S., Filemyor, E., et al., (2018). Age and gender trends in insecticide treated nets use in sub-Saharan Africa: A multi country analysis. *Malaria journal*, 17:423

Rural Health Information hub, (2018). https://www.ruralhealthinfo.org

Sabin, L., Evan, M. S., Hecht, Mohamad, I. Brooks, Mrigendra, P., Singh, Kojo, Y., Abanish, R., Blair, J.W., Philip, A. B., Mathew, B., Jordan, T., Neeru, S. & Davidson, H. H. (2018). Prevention and treatment of malaria in pregnancy: what do pregnant women and health care workers in East india know and do about it? Malaria journal, 17:207. https://doi: 10.1186/s12936-018-2339-9

Tar-Attia C. K., Bassat, Q., Breeze-Barry, B., Lansana, D. P., Garcia-Sipido, M. G., Sarukhan, A., Maixenchs, M., Mayor, A. & Martinez-Perez, G. (2018). Community-informed research on malaria in pregnancy in Moronvia, Liberia: a grounded theory study. *Malaria Journal*, 17:382

Taylor, W. R.., Hanson, J., Turner, G. D., White, N. J & Dondorp, A. M (2012). "Respiratory manifestations of malaria". *Chest.* 142 (2): 492–505

World Health Organisation Malaria elimination (2017): report from the inaugural global forum of countries with potential to eliminate malaria by 2020. Weekly Epidemiological Record, 92 (39):578–586

WHO Malaria Report (2019). Global Malaria Programme: Pregnant women and infants. https://www.who.int

World Health Organisation Malaria Report (2021). https://who,canto.global/v/malaria report