

# KNOWLEDGE AND TREATMENT SEEKING BEHAVIOUR OF PEOPLE IN NIGERIA-BENIN BORDER COMMUNITY OF OJA- ODAN, YEWA NORTH LG, NIGERIA.

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## ABSTRACT

The scourge of malaria infection in Africa remains despite all effort to combat the disease. The research investigated the knowledge and treatment practices in a boarder community of *Oja-odan*, Ogun state, Nigeria. It employed a cluster sampling method to recruit respondents that are 300 in numbers. Findings indicated that the knowledge about malaria among the populace was at average of 151(50.3%), while 111(37.0%) are of the opinion that stagnant water is the breeding site for mosquito, 50% of the respondents are of the opinion that the highest transmission period is rainy season. While the majority of them preferred purchasing of the drugs from Pharmacy, Artemisinin combination therapy (ACTs) is the most preferred antimalarial drug(130, 65%). Majority of them have dual citizenship of Nigeria and Benin republic. While the respondents claimed to be listening to radio stations of both countries as a result of proximity, this does not in any way affects their opinion about treatment or the choice of antimalarial drugs. The reason for this could be as results of both countries have the same treatment regiments for malaria. While the efforts in educating populace on common cause and treatment of malaria is yielding fruits, government and other stakeholders must make the drugs for the treatment of malaria lie majorly in the hands of professionals in government hospitals.

## 1. INTRODUCTION

Malaria remains an important public health concern in countries where transmission occurs regularly, and in areas where transmission has been largely controlled or eliminated (Bioland,2001). Malaria is a complex disease that varies widely in epidemiology and clinical manifestation in different parts of the world. This variability is the result of factors such as the species of malaria parasites that occur in a given area and their susceptibility to commonly used or available antimalaria drugs. Also, the distribution and efficiency of mosquito vectors, climate and other environmental conditions contribute to distribution of malaria (Bioland,2001).

It has been established that malaria prevalence in border communities is often higher than in hinterlands and this is due to various factors which include lower access to health services, treatment-seeking behaviour of marginalized populations that typically inhabit border areas, difficulties in deploying prevention programme to hard-to-reach communities, often in difficult terrain, and constant movement of people across porous national boundaries and importation of drug resistant strains (Wangidi *et al.*,2015). Also, cross-border human mobility could, pose a major challenge to malaria programming since neighboring country's preferences are unlikely to align (Khadka *et al.*,2018). Border malaria occurs because the contiguous areas share a common ecology, with frequent mixing of people, parasites, and vectors most especially those that share a common ancestry, cultural heritage, and malaria ecology (Al-Zahrani *et al.*,2018).

Accounting for human population movement (HPM) in planning for control, elimination and post-elimination surveillance is important, as evidenced by previous elimination attempts that were undermined by the reintroduction of malaria through HPM. Strategic control and elimination planning, therefore, requires quantitative One of the critical keys to the elimination or transmission reduction of malaria is planning for control, elimination and post-elimination surveillance is important, as evidenced by previous elimination attempts that were undermined by the reintroduction of malaria through Human population movement. Therefore, information on HPM patterns and the translation of these into parasite dispersion is needed for the control of malaria. According to HPM patterns vary substantially by time scales, spatial scales, motivations for travel and socioeconomic and demographic characteristics of traveler (Edmonston&Michalowski,2004).Over the past decade African countries have transitioned from CQ or SP to

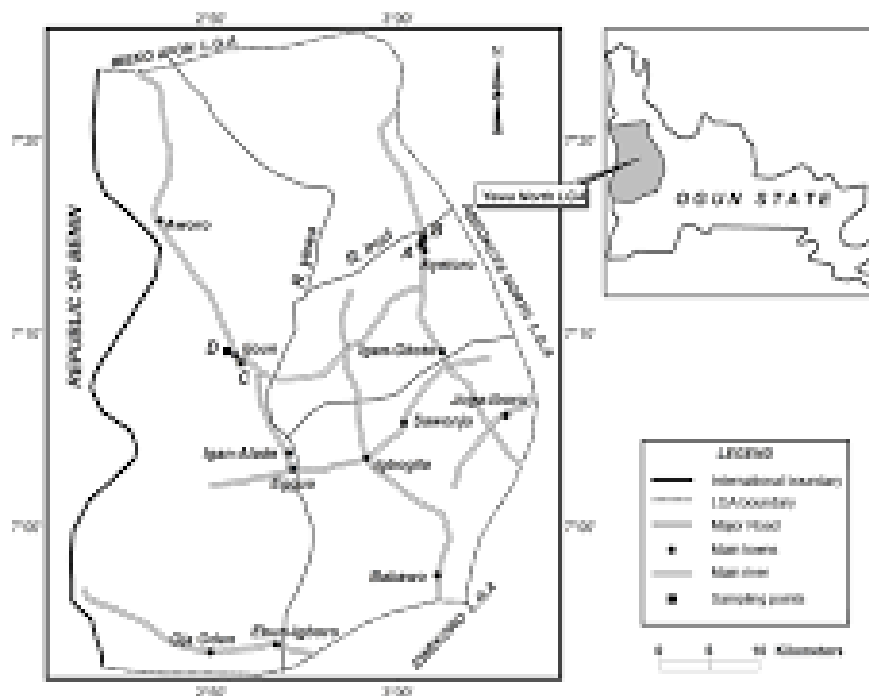
artemisinin-based combination therapies (ACTs) as a first-line policy for uncomplicated malaria. The transition from CQ took place in most African countries in the late 1990s and 2000s (O'connell, *et al.*, 2011).

The study aimed to elucidate the knowledge about malaria treatment and influence of cross border information on treatment and malaria perception.

### Study Area

Oja-odan ( Oja-odan) is a populated place (class P - Populated Place) in Ogun State (Nigeria It is located at an elevation of 36 meters above sea level and its population amounts to 71,657. Its coordinates are 6°52'60" N and 2°51'0" E in DMS (Degrees Minutes Seconds) or 6.88333 and 2.85 (in decimal degrees).

The journey to Benin republic through various route available from *Oja-odan* is a short distance of less than 30 minutes depending on the route one takes and across to Ilogor, a small but bustling town in Benin. Most of the residents have unofficial dual citizenship of the two countries whether by birth or intermarriage. Trade and farming are the two main occupations of the inhabitants.



Map of Yewa North local government. Source: <http://www.google.com/maps>

## 2. STUDY DESIGN

The study employed a cluster sampling method to recruit respondents for the study. *Oja-odan* is a heterogeneous community made up of Yoruba ethnic group of Nigeria and Benin republic and other ethnic groups of Hausa and Ibo of Nigeria. The settlement was divided into eight clusters separated by definite geographical marks. Simple two-stage cluster sampling was used. In the first stage, four clusters were selected by simple random sampling (SRS). In the second stage, the units (elements) in the selected clusters of the first stage are then sampled by simple random sampling. In each house a family was selected preferably the male head of the house but in absence of the male head, a female preferably wife was interviewed.

The questionnaire sought information on respondents' socio-demographic variables, knowledge of malaria prevention and treatment including use of drugs and insecticide treated nets (ITN). In addition, the respondents were asked how the latest episode of fever was treated.

### 3. RESULTS

**Table 1: Respondents' awareness on the use of new anti-malarial drugs in relation to their socio-demographic characteristics (n=300)**

Status	F	%	Significant test
<b>Age</b>			
18-28	77	33.2	$\chi^2 = 30.56$ P= 0.167
29-38	61	26.3	
39-48	30	12.9	
49-58	27	11.6	
59-68	24	10.3	
69-78	12	5.2	
> 79	1	0.4	
<b>Marital status</b>			
Single	43	14.3	$\chi^2 = 7.02$ P=0.856
Married	219	73.0	
Divorce	19	6.3	
Widow/Widower	19	6.3	
<b>Educational Level</b>			
None	105	35	$\chi^2 = 28.9$ P=0.089
Primary school	68	22.7	
Junior Secondary school	16	5.3	
Senior Secondary school	81	27.0	
Tertiary school	14	4.7	
No response	16	5.3	
<b>Occupation</b>			
Trading	175	58.3	$\chi^2 = 34.56$ P=0.023
Artisan	39	13.0	
Farming	39	13.0	
Teaching	13	4.3	
Civil servant	8	2.7	
No response	26	8.7	

The table shows the socio-demographic characteristics of the respondents in the study area. The age of majority of the respondents (33.2%) fall between 18-28years, (26.3%) fall between 29-38years, (12.9%) fall between 39-48years, (11.6%) fall between 49-58years, (10.3%) fall between 59-68years, (5.2%) fall between 69-78years and (0.4%) are above 79years. Findings revealed that (14.3%) of the respondents are single (73.0%) are married, (6.3%) divorced while the remaining (6.3%) of the respondents are widow/widower.

The educational status of the respondents showed that (35.0%) had non-formal education, (22.7%) had primary education, (5.3%) had junior secondary education, (27.0%) had senior secondary education and (4.7%) had tertiary education. Also, the result indicated that (58.3%) of the total respondents involve in trading, (13.0%) are artisan (13.0%) are farmers, (8.7%) are civil servant and (4.3%) are teachers.

**Table 2: Respondents' knowledge about symptoms of malaria (n=300\*)**

Responses	no of positive response	%
Body weakness	173	57.7
Loss of appetite	99	33.0
Headache and dizziness	136	45.3
Cold	127	42.3

Diarrhea and vomiting	57	19.0
Fever	130	43.1

\*Multiple responses allowed.

The response to the knowledge about symptoms of malaria was good with larger percentage of the respondents indicated body weakness (173,57.7%) as a symptoms and this closely followed by Headache and dizziness (127,42.3%), Fever (130,43.1%), cold (127,42.3%), loss of appetite (99,33.0%) and Diarrhea/vomiting (57,19.0%).

**Table 3: Respondents' knowledge about causes of malaria (n) =300**

Responses	No of positive response	%
Mosquito bite	151	50.3
Eating sugary things	12	4.0
Eating dirty food or Water	57	19.0
Getting soaked with rain	12	4.0
Cold or changing weather	27	9.0
Others	19	6.3
No response	22	7.3

The table shows mosquito bite has been frequently mentioned (151, 50.3%). While few of the respondents mentioned some indices like eating dirty food, drinking dirty water, changing weather as some of the facts that could lead to the malaria.

**Table 4: Respondents' knowledge of the factors or conditions that encourage the spread of malaria. (n=300)**

*Factors	Positive responses	%
Poor drainage	101	33.7
Improper disposal of waste	189	63
Overgrown bushes	113	37.7
Stagnant water	111	37.0

\*Multiple responses allowed

Table 5: Shows the respondents' knowledge of factors or condition that encourages the spread of malaria.

**Table 5: Respondents' last episode of malaria attack (N) =300**

Variables	number	%
Last two weeks	69	23.0
Last three month	53	17.7
Cannot specify	142	47.3
No response	36	12.0

Respondents' last episode of malaria indicated that (69, 23.0%) of them had malaria in the past two weeks, (53,17.7%) in the last three months while larger percentage of them (142,47.3%) could not specify the last time they had malaria episode.

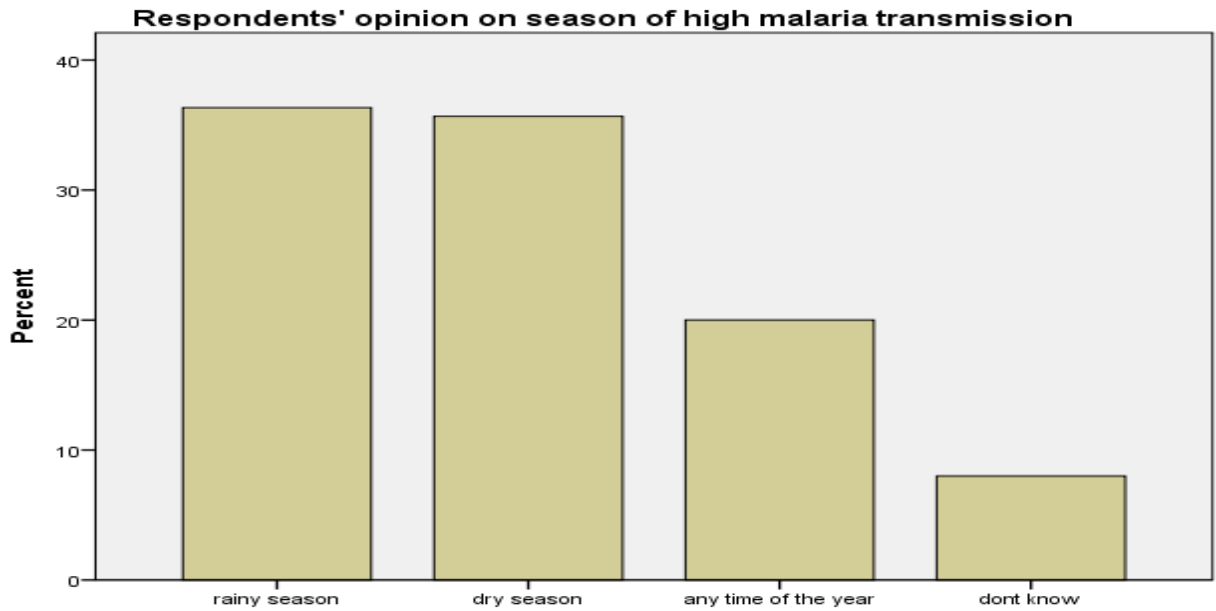


Fig 1: shows the respondents' opinion about the highest season of malaria transmission. The highest percentage of the respondents indicated the peak of transmission to be during raining season and dry season respectively (48.5% and 47.5%).

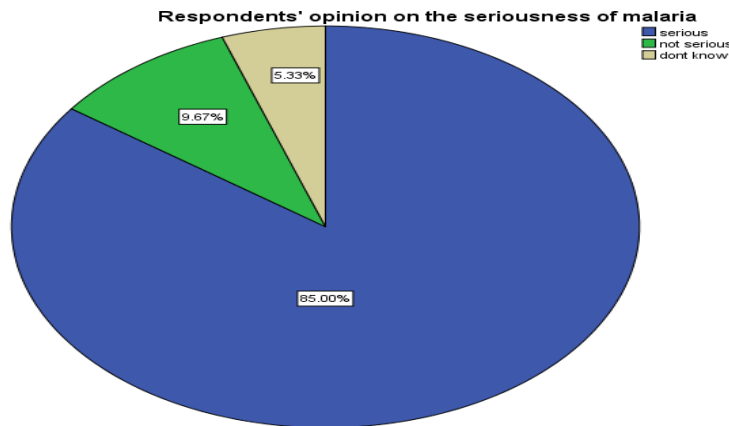


Fig 2: Those respondents that believe that malaria is a serious ailments is 85.0% and 5.3% of them are of opinion that the ailments is not a serious one, 9.67% could not classified whether the infection is a serious one or not.

Table 6: Respondents school attendance and the choice of anti-malarial drugs(n=294)

Drugs	Yes	No	Statistical value
ACT	130 (65%)	69 (34.5%)	$\chi^2 = 2.418$ P=0.877
Chloroquine	11(64.7%)	6(35.5%)	
Others/analgesic	54 (69.2%)	24 (30.8%)	

The course respondents school attendance and the choice of malaria were compared, the result showed a significant difference between the choice of malaria drugs and the school attendance.

**Table 7: Duration of fever before response by mothers (n=300)**

Day's	numbers	%
Same day	54	18.0
Second day	98	32.7
Third day	79	26.3
Fourth day	44	14.7
Fifth day	19	6.3
No response	6	2.0

The table indicated promptness to the treatment of malaria by the respondents:, largest percentage of them (98,32.7%) indicated the second day of the infection while 54,18.0% of them indicate treatment on the same day of the malaria episode.

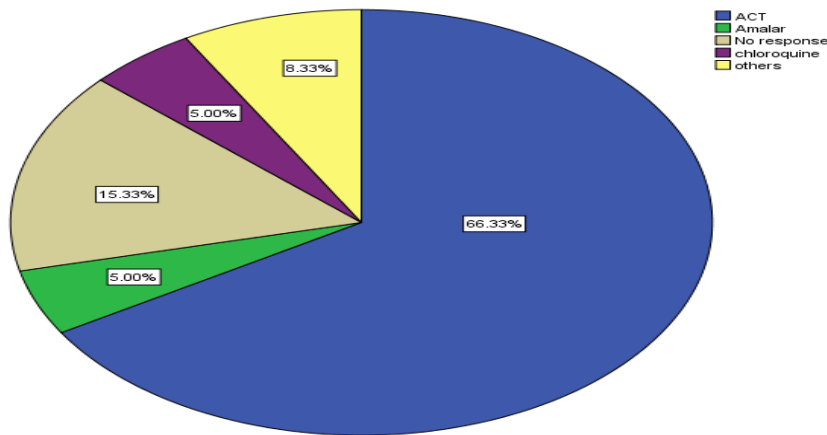


Fig 3: Most of them indicated the choice of ACT as a preferable antimalaria drug treatment (66.33%), sulphadoxinepyrimethamine/Amalar (5.0%) and chloroquine(5.0%) while small proportion of them 8.33% could not actually stated the antimalarial drugs they administered during the episode.

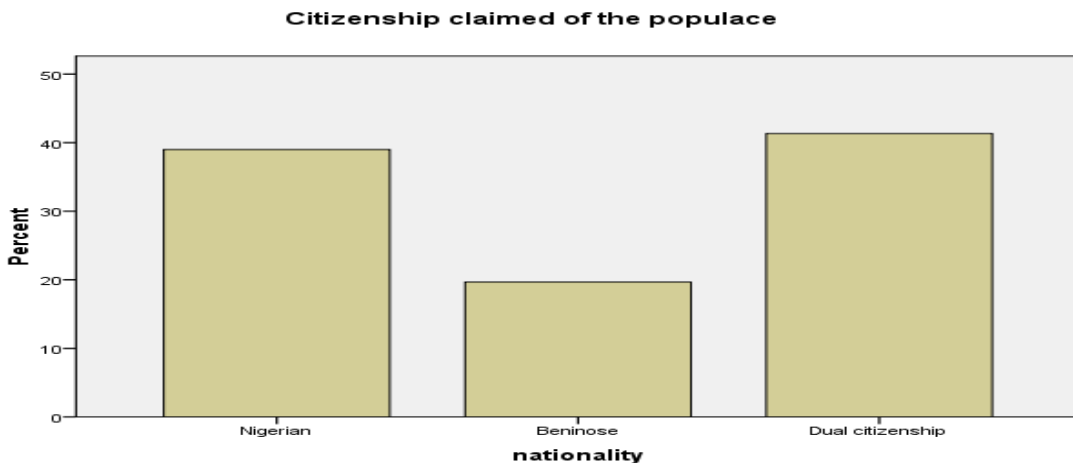


Fig 4: Majority of the respondents have dual citizenship of Nigeria and Benin republic (42.5%), those that claimed of been Nigerians alone are 38.3% while about 20% are of Benin national alone

**Table 8: Sources of the drugs by respondents' (n=300)**

Variables	numbers	%
Pharmacy	202	67.3
Govt. hospital	35	11.7
Govt. health center	24	8.0
Drug hawker	27	9.0
No response	12	4.0

The number of respondents' that purchased drugs from retail outlet like pharmacy shop are of higher proportion of 67.3%, government hospital 11.7%, health center 8.0% and from drug hawkers is 9.0%.

**Table 9: Sources of awareness on the drug used for malaria treatment (n=300)**

Sources	frequency (n)	%
Radio	14	4.7
Friends	193	64.5
Hospital/health centers	92	30.8

The sources of awareness of drugs to be used in treating malaria varies: while 4.7% claimed to have gotten the information through listening to radio, 64.5% said to have obtained the information from friends while 30.8% got aware of the drug used from the hospital/clinic they used.

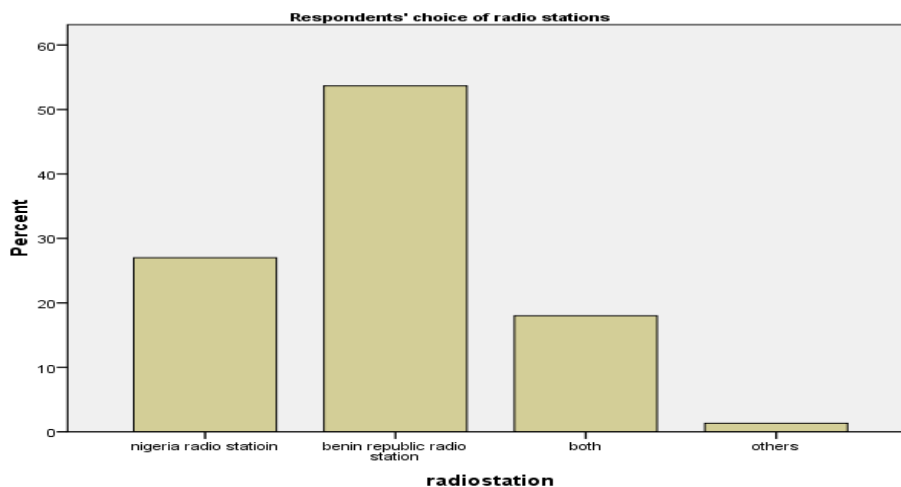


Fig 5: The fig above indicated different radio of interest of the respondents. The Benin republic radio is the major radio of interest by most respondents and this is closely follow by Nigerian radio while sizeable number listen to both radio station.

#### 4. DISCUSSION

Effort to control malaria needs holistic approach and this range from understanding the knowledge about its transmission, treatment and the pathogenicity. The peculiarities of different environment could many times determine the perception of the disease which could be influenced by culture and social values. The study assesses the influence of cross boarder activities and conflict of information about the knowledge and treatment of malaria. The research among many other things sought to investigate the influences of many factors that are really obtainable in border villages of Nigeria. Among the factors are brisk business peculiar to this environment, cross boarder trading most that are not legal, influence of drug hawker most of them that are imported and not recommended by government of the country but find their way through porous border and compromise of the law enforcement agents.

*Oja-odan* is an agrarian boarder community with influx of commercial activities taking advantages of closeness to boarder; therefore it is not uncommon for various products including drugs claimed to be treating malaria most that are not recommended for the treatment of malaria by Nigeria health ministry. Also, dual inhabitation of most parents and the brisk business that encourage stipends which school attendance will not offer at early stage of life. This attitude encourages illiteracy and poor understanding of the etiology of the diseases.

Conflicts of information about the efficacy of certain drug in treatment of malaria has been one of the bane of malaria knowledge in boarder communities, this has a result of different policy on the treatment adopted by each communities or country. This information could be emanated through Trans- movement of inhabitant or through media like radio, television even print media. Although among these means of information dissemination, radio has been seen to be the most effective taking advantage of the wide range of people it can reach. Most communities in Africa are not connected to national grids and where it is present, it could be epileptic supply therefore this has made radio which mostly used portable dry cells, a prime medium for educational initiatives, and various health topics.

Misinformation or information contradiction could influence adoption or policy changes at times especially when the information is not been regulated. In this study the choice of new anti-malarial drug is very high toward the new malaria policy of ACTs, although some mothers were unable to identify the drugs that were used during malaria episode .The majority choice of ACT could be influenced by drug policy of malaria treatment from chloroquine to artemisinin combination therapy which have been adopted by the both countries(Zinson&Cherifath,2017) therefore there is no case of contradiction as many of them claimed to be listening to both radio and other media from both countries.

One of the challenges of the boarder communities is poor access to health facilities and tendencies of been neglected due to possibilities of government been more focus with those in hinterlands. In this study there is a reflection of this, the settlement of *Oja-odan* according to 1991 census and based on recent population projection is about 79,000 inhabitant, Although few private clinic were there which likely to be charging higher prices for treatment since the presence of government-owned clinic was low. Therefore this could encourage the rate of self-medication and quackery (Strasser,2003).

The use of analgesic is relatively high (54, 18.36%), in treatment of body pain that accompanying malaria and malaria related symptoms although indiscriminately. The use of analgesic in place of antimalarial drugs has earlier been reported by other authors therefore effort must be made in better educational and health promotion exercise.

The knowledge about the causes and predisposing factors of the diseases is very high compare to what was obtainable in a similar environment elsewhere although this does not translate into improvement in treatment practices and health seeking behaviour. This was similar to what was obtained in northern part of Nigeria (Singh,Musa,Ebere,2014). In another similar research work conducted elsewhere, it was concluded that understanding of malaria causes and treatment is much better in urban area than in rural areas this could be due to different exposure, access to information and treatment centers (Yaya, *et al.*,2017).

Despite all these, there is still an improvement in level of knowledge compare to other places with similar settings this could be due to a recent awareness campaign that took place not quite long in Ogun state, Nigeria where the state government distributed the insecticide treated net and the true indicator of this is, in low episode of malaria in those were tested. Although a sizeable number of the handlers were not using it due to many reason ranges from non-comfortable to use, irritation and nowhere to hangs the net. This opinion by the respondents is similar to another one where it was reported that sleeping arrangement and availability of suitable location to hang the net was an hindrance to possession of ITN in their study areas (Iwashita,*et al.*,2010).

In conclusion, malaria is a disease that requires holistic approach to combat one of the major factors that encourages the resistance to drug is abuse and trans-border transmission. There is a need for targeted educational programs to increase the communities' efforts to develop desirable attitude and practices regarding malaria and their participation for malaria control. Also, in order to control malaria infection and to completely eradicate it, cross border collaboration among countries is vital ad there is needs for encouraging operational research that supports these control measures.

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