ORIGINAL RESEARCH

Knowledge, Attitudes and Practice About Malaria Prevention in a Sub-Urban Community in Southwestern Nigeria

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ABSTRACT

Background: Malaria is a complex disease that varies widely in epidemiology and clinical manifestation in different parts of the world. The World Health Organization (WHO) estimates 241 million malaria cases in 2020. April 25 every year, the world comes together under "World Malaria Day" (WMD) to raise awareness of the burden of malaria around the world.
Objective: This study was conducted on WMD 2022 to evaluate the knowledge, attitude and practice toward malaria prevention in a sub-urban community in south-western Nigeria.
Methods: This cross-sectional study was conducted among residents in the Mushin local government area, Lagos State, on WMD 2022. A self-administered structured questionnaire was filled out by conveniently sampled participants in a strategic location in the venue. Descriptive analysis was carried out to determine participants' knowledge and attitude to malaria and practices of malaria prevention.
Results: One hundred and thirty-five (135) people participated in the study. Majority of the respondents were female (77; 57%) and between the ages 44 to 56 years (48; 35.6%). About (101; 75%) of the respondent had good knowledge of malaria but almost (79; 58.9%) had poor attitude to malaria. The majority (88; 65.2%) of the respondents had a poor practice towards malaria prevention.
Conclusion: Most participants had good knowledge about malaria but poor attitude and practice of prevention of the disease. These findings stress the need to enhance community knowledge and sensitization efforts about malaria. Public health enlightenment efforts on malaria prevention should be intensified.

Keywords: Malaria; Malaria prevention; Knowledge; Attitude; Practice; Southwest Nigeria

INTRODUCTION

Despite growing prevention, diagnosis, and treatment efforts, malaria prevalence in sub-Saharan African nations is rising. There were an expected 241 million malaria cases in 2020 in 85 malaria-endemic countries (including French Guiana), up from 227 million cases in 2019, with the majority of this rise coming from nations in the World Health

Organization (WHO) African Region[1]. Malaria is a complex disease that varies widely in epidemiology and clinical manifestation in different parts of the world[2]. Malaria is caused by infection from protozoan parasites of the genus *Plasmodium. Plasmodium falciparum*, one of the four kinds of human malaria parasites, is thought to be the most dangerous and deadly[3]. The primary goal of most malaria-control programs is to avoid malaria-related death and morbidity; therefore, knowing the epidemiology of clinical malaria has gained new significance[3,4]. Insecticide-treated nets (ITNs) are the focus of current worldwide efforts to combat malaria through vector control[5].

The economics of developing novel medications for tropical diseases, such as malaria, are such that there is a significant gap between the importance of the disease to public health and the number of resources dedicated to finding new treatments. This discrepancy occurs at a time when malaria parasites have shown some degree of resistance to nearly every antimalarial treatment now on the market, hence significantly raising the price and complexity of attaining a parasitological cure[2] [6]. The federal, state, and local governments have all made significant efforts to combat malaria in Nigeria. Despite these effort and prevention measures, numerous obstacles still stand in the way of a nation free of malaria. Three key strategies make up Nigeria's national malaria control plan at the moment: early diagnosis and prompt treatment, targeted vector control, and epidemic prevention and control[7]. Monitoring and assessing the success of malaria control activities requires understanding how these techniques work and identifying the key factors that influence people's protective behaviours in communities. Different communities and individual households have different understandings of the potential causes, mechanisms of transmission, and preferences for and decisions on adopting preventative and control measures. This study aims to offer the data required to support and direct local and regional malaria prevention tactics and policies. The study's objective was to assess people's knowledge, attitude and practices towards malaria infection, its prevention and control in a community in southwestern Nigeria on World Malaria Day (WMD).

METHODS

Study Location

The research was conducted at 71 Palm Avenue, Mushin 102215, 6.5352^0 N, 3.3490^0 E, Mushin Local Government Area of Lagos State. Mushin is one of Nigeria's 774 Local Government Areas and is a suburb of Lagos State According to the 2006 Census, 633,009 people were living there and is primarily a crowded residential area with poor sanitation and subpar housing[8].

Study Design

The WMD started with a health talk, health checks of vital signs, malaria screening and distribution of ITNs. The study population was gathered from individuals in the community who participated in the (WMD). Before beginning the fieldwork, the researchers pretested and validated a semi-structured questionnaire they had devised to ensure the language was acceptable, consistent, and reliable. Questionnaires were given to participants to determine their knowledge, attitudes, and practices regarding malaria prevention. Those who could not read or write were interviewed in "Yoruba," the native tongue of the inhabitants of the research area. The survey language used was written in English.

Sample Size Calculation

Participants were recruited by convenience sampling. The researchers had a WMD 2022 stand in a strategic position in the community. The researchers estimated that close to 200 individuals could walk past the WMD 2022 stand within the time frame. The Raosoft® sample size calculator was used to determine the minimum sample size required for the study. The sample size calculated was 132, with a 95% confidence level, 5% margin of

error and assuming a 50% response distribution.

Inclusion criteria

Only individuals Aged ≥ 18 were recruited for the study

Data Collection and Study Instrument

Informed consent among participants involved both written and verbal. The aim of the study was explained accordingly. This study utilized a self-administered structured questionnaire comprising four sections. The first section focused on the demographic information of the participants. The second section assessed knowledge about malaria, including sources of information, and the third and fourth sections assessed the attitude and practice respectively toward malaria prevention. The first section was an 11-item scale that assessed knowledge of malaria with the options 'Yes' (coded as 1) or 'No' (coded as 2), or 'Not sure' (coded as 3).

Statistical analysis

Data were analyzed using IBM SPSS Version 22.0. Descriptive statistics were used to summarize the data. The respondent's knowledge of malaria was assessed as follows: One mark was awarded for each well-answered question; for wrong or blank responses, 0 points were awarded. Knowledge scores, which varied from one to nine, were standardized by factoring in the proportion of correct answers. Respondents were separated into three categories based on their normalized knowledge scores: strong knowledge was defined as having a score over 60, and shared knowledge scored between 30 and 60. Pearson's Chi-Square test was used to test the association between the demographic variables, knowledge, attitude and practice about malaria prevention at a statistical significance set as $P< 0.05$.

RESULTS

Sociodemographic characteristics of the respondents.

There were 135 participants in this survey. All of them (100%) agreed to participate.

Table 1 shows that the majority of the respondents were female (57%) and between the ages 44 to 56 years (35.6%).

Table 1: Sociodemographic information

Items	Frequency (n = 135)	Percentage
Gender		
Male	58	43
Female	77	57
Age		
18-30	26	19.3
31-43	40	29.6
44-56	48	35.6
57-69	16	11.9
70 and above	5	3.6

Participants' knowledge of malaria:

The majority (130; 96.3%) of the respondents indicated that malaria is transmitted through mosquito bites however, a good proportion (104;77%) also believe it is spread through drinking dirty water or by touching malaria-infected persons (96; 71.1%). About 118 (94%) and 127 (87%) identified headache and fever respectively as symptoms of malaria. Only 4 (3%) did not know malaria symptoms.

Table 3 below presents the summary of malaria knowledge of the participants. Seventy five percent had good knowledge of malaria while only about 7% had poor knowledge.

Table 2: Knowledge of malaria by the respondents

Knowledge of malaria	Yes (%)	No (%)	Maybe (%)
Malaria transmission			
Do you believe that malaria is transmitted through mosquito bites?	130 (96.3)	2 (1.5)	3 (2.2)
Can malaria be spread by drinking dirty water?	104 (77)	20 (14.8)	11 (8.2)
Can malaria be spread by touching malaria-infected persons?	22 (16.3)	96 (71.1)	17 (12.6)
Breeding places of mosquitoes:			
-Dirty water	117 (86.7)	18 (13.3)	0 (0.0)
-Garbage (dustbin)	121 (89.6)	14 (10.4)	0 (0.0)
-Stagnant water	115 (85.2)	20 (14.8)	0 (0.0)
-Maybe all	4 (3)	131 (97)	0 (0.0)
Symptoms of malaria:			
-Fever	118(87.4)	17(12.6)	0 (0.0)
-Headache	127(94.1)	8(5.9)	0 (0.0)
-Cough	89(65.9)	46(34.1)	0 (0.0)
-No idea	4 (3)	131(97)	0 (0.0)

Table 3: Respondents' knowledge scale about malaria prevention

Items	Variables	Frequency	Percentage
Knowledge of malaria	Good	101	75
	Moderate	25	18.2
	Poor	9	6.8

Participants' attitude to malaria:

About a third (33%) heard a message on malaria prevention within the last three months. The majority (91.9%) believed that the spread of mosquitoes could be reduced by sleeping under mosquito nets though 43% have never practised sleeping under the nets.

Table 5 below presents the summary of the participant's attitude toward malaria with 58.9% having a poor attitude to malaria and only 8.1% having an good attitude to malaria.

Table 4: Respondents attitudes about malaria prevention

Attitudes about malaria prevention	Yes (%)	No (%)	Never (%)	Rarely (%)	Once in a while (%)	Very often (%)
Did you hear any message on malaria prevention within the last 3 months?	45 (33.3)	90 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Do you believe mosquito spread can be reduced by sleeping under nets?	124 (91.9)	11 (8.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
How often do you practice sleeping under the nets?	0 (0.0)	0 (0.0)	58 (43.0)	18 (13.3)	31 (23)	28 (20.7)

Table 5: Respondents' attitude scale about malaria prevention

Items	Variables	Frequency	Percentage
Respondents attitude	Good	11	8.1
	Fair	45	33
	Poor	79	58.9

Participants' practice of malaria prevention:
About a third of the respondents (33.3%) seek treatment from healthcare centres or hospitals when they have malaria symptoms. Less than a fifth (14.1%) slept under a net a day before data was collected and the majority believed that clearing bushes around their environment reduce the spread of malaria (91.1%).

Table 7 below presents the summary of the respondents' practice of malaria prevention with 65.2%) exhibiting poor and 10.4% having good practices of malaria prevention.

Table 6: Respondents malaria prevention practices

Practice of malaria prevention	Never (%)	Rarely (%)	Once in a while (%)	Very often (%)	Yes (%)	No (%)
Do you seek treatment from HCH or Hospitals when you have malaria symptoms?	23 (17.0)	24 (17.8)	43 (31.9)	45 (33.3)	-	-
Did you sleep under a net last night?	-	-	-	-	19 (14.1)	116 (85.9)
Do you clear bushes around your environment to reduce malaria spread	-	-	-	-	123 (91.1)	12 (8.9)

Table 7: Respondents' practice scale about malaria prevention

Items	Variables	Frequency	Percentage
Malaria prevention practices	Good	14	10.4
	Fair	33	24.4
	poor	88	65.2

DISCUSSION

This study examined the knowledge and practices of people living in a community in southwest Nigeria who were at risk of contracting malaria. It also looked at mosquito breeding grounds and the clinical examination, diagnosis, and treatment of patients who presented with symptoms of uncomplicated malaria. The study stressed the necessity of maintaining malaria control, which can only be accomplished through strong community knowledge of the illness and its transmission at local levels. Most of the participants had good knowledge of malaria; this can be attributed to the high sensitization campaign about malaria pre the WMD. Despite the excellent knowledge, most of the participants supported that malaria can be spread by drinking dirty water. This shows that while the population can be generally knowledgeable about a disease state, having the right source of knowledge is also of great importance. However, this study did not ascertain their sources of information about malaria, unlike similar studies where greater access to media information and contact with modern health services found in urban settlements was considered the reason for higher knowledge[5]. In this study, mosquito bites were widely acknowledged as the source of malaria, and the respondents were highly knowledgeable about the presenting symptoms of malaria such as fever and headache. Prompt, efficient treatment is crucial for malaria control, and not knowing the right symptoms may make case management difficult. Given these findings, it may be ideal for public health initiatives in urban areas to concentrate on changes to control programs that boost clinic attendance. This might be done by sending out educational messages, particularly to an uninformed member of society, and emphasizing the potentially severe effects of fever disease, especially in kids. This would go a long way to curb improper use of

antimalaria, ultimately leading to drug resistance.

Also, less than a half of the participants never slept under the nets before this study, which is not consistent with reports in Northern Nigeria where about majority of the respondents reported owning any bed nets as the most common protective method against malaria in practice[9]. Unavailability of nets and the high cost of ITNs, are possible reasons for this result. Government and Non-governmental organizations should ensure not just the procurement of nets but adequate distribution to rural and sun-urban areas where these nets are more needed. Delivering subsidized ITNs to vulnerable populations in places with the worst malaria and poverty requires unique delivery tactics[10]. The poor attitude in this study is noticed as majority of the respondent believed that malaria could be prevented by ITN and yet majority have never slept under a net this is opposite of the study by Erhun *et al*., and de Sousa Pinto *et al*.,[10,11] where majority of the respondent believed that ITN could be used for prevention and majority also possessed and slept under ITN.

As against previous studies in Tanzania, the majority of respondent practiced bush clearing as a mode of malaria prevention[12]. In another study majority of the participant didn't respond to bush clearing as their most preferred method of clearing[10]. The method of malaria prevention practice differs by the extent of development in a particular region, most of the participant practiced this method because the study area is a sub-urban region and most other expensive mode of prevention might not be readily available. Nearly all of Nigeria's efforts to combat malaria rely on drug-based chemotherapy[13], which has not been practical. Improving the training of local health community actors and subsequently improving dissemination and explanation to beneficiarie[12]. Therefore, a community's knowledge, attitudes, and habits must be taken into consideration while designing a malaria control program in order for it to be successful[7].

This study has some limitations: it targeted the only respondents who attended the WMD outreach as a proxy to KAP held by all community members. Ideally, a broader sampling method should have been used across the range of adults within the communities. More research might benefit in developing techniques to improve upcoming educational and awareness interventions.

CONCLUSION

Most participants had good knowledge about malaria but poor attitude and practice of malaria prevention These findings stress the need to enhance community knowledge and sensitization efforts about malaria. Public health enlightenment efforts on malaria should be intensified In addition, this study demonstrates that pharmacists can be actively involved in health promotional activities on world advocacy days, like World Malaria Day.

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