Knowledge, Attitude and Control Practices of Malaria at Bunkure Local Government Area of Kano State

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Abstract: This study was aimed at evaluating the knowledge, attitude as well as control practices of malaria among residents of Bunkure Local Government Area of Kano State, Nigeria. Questionnaire and interview were employed for this study. All data collected were analyzed using SPSS version 20. Out of 400 participants interviewed, 95.75 %, 96% and 79.5% of them had knowledge about the transmission, symptoms, and prevention of the disease, respectively. Majority (91%) of the respondents considered malaria a serious disease and 83% had positive attitude toward the use of hospital for malaria treatment. Forty percent and 88.5% of the respondents had good practices towards malaria prevention and treatment respectively. Despite high levels of knowledge and attitudes in the study area, gaps persist in appropriate preventive practices. This study demonstrated the need to focus on awareness programs to use existing knowledge in practice to control malaria in this locality.

Keywords: Attitude, Bunkure, Knowledge, Malaria, Practices.

INTRODUTION

Malaria is one the world's most deadly parasitic disease (Sadanand, 2010). It is a disease that is preventable and curable. This disease is a serious health problem in many developing countries and one of the major diseases for people living in tropical and sub-tropical areas, especially in Africa, where Nigeria has the greatest number of malaria cases (WHO, 2015). Globally, approximately 429,000 deaths and 216 million cases of malaria occur annually and 3.2 billion people are at risk of infection (WHO, 2017).

Nigeria suffers the world's greatest malaria burden, with approximately 51million cases and 207,000 deaths reported annually (approximately 30% of the total malaria burden in Africa), while 97 % of the total population (approximately 173 million) is at risk of infection (WHO, 2014). The country is made up of several hundreds of communities and settlements with their own indigenous people, microclimate, topography, population densities, cultural practices and general way of life. These parameters greatly influence the transmission intensity and management of the disease (Umaru and Gabriel, 2015).

Malaria is highly prevalent among rural Hausa communities in Nigeria (Dawaki *et al*., 2016). Many control measures have been implemented in eradicating malaria, but the disease still remain a major public health problem. The failure to consider community's knowledge, attitude, and practice (KAP) about malaria has contributed to the inability of programs to achieve sustainable control (Tyagi *et al.,* 2005). In 2015 there was an outbreak of malaria in Kano State and this was blamed on peoples' attitude and control practices towards malaria (Health reporters, 2016).

Families are primary contact within which most health problems and illnesses occur and have a powerful influence on health (Campbell *et al.,* 2002). Understanding these issues, could help in developing strategies, aimed at sustainable control of malaria. This study was conducted to access Knowledge, Attitude and Control practices of malaria among residents of Bunkure Local Government Area of Kano State.

MATERIALS AND METHODS

The Study Area

The study area is Bunkure Local Government Area of Kano State in north-western Nigeria, is located approximately 88.5km east of Kano, in the semiarid zone, around latitudes 10˚33' N to 12˚03' N and longitudes 7˚34' E to 8˚32' E.

It has an area of 487km^2 and a population of 170,891.The climate of the state is mainly Sudanese type of the tropical wet-dry season which is characterized by 5-6 months of rainfall (from May to October) and 6-7 months of dry season with the mean annual rainfall of 792mm (Olofin, 1985). The temperature is averagely warm to hot throughout the year at about 25± 7˚c (Olofin, 2002).

Ethical Considerations

Prior to the commencement of this work, an ethical approval for the study was obtained from the Ministry of Health and ethical committee of Aminu Kano Teaching Hospital. Permission was obtained from Head of Primary Health Care Department at Bunkure Local Government Area before carrying out the survey. Consent was obtained from head of selected households before inclusion as participant.

Study Population

The study populations in this study were adult above or equal to 18years of age in the selected households.

Study Design

The study was a descriptive cross-sectional survey which was carried out between August and December, 2017. A questionnaire was used to access peoples' Knowledge, Attitude and control Practices. Cluster sampling method was used in this study according to Lance and Hattori (2016) to administer the questionnaire to the participants.

Sample Size

The sample size was computed based on Wane (2015) formula for estimating population Proportion. The sample size obtained was 400.

Data Collection

A total of 400 households were randomly selected for interview. A structured questionnaire was administered to the head of selected households to collect information on KAP for malaria. This was done in accordance with Bowling (2010). The questionnaire has four sections; socio-demographic characteristics, knowledge, attitude and control practices for malaria. The questionnaire was written in English, and translated and communicated in local language (Hausa).

Data Analysis

All data collected were analyzed by statistical package for social science (SPSS) version 20. Descriptive statistics was carried out to determine the frequencies and percentages of the variables.

RESULTS

Knowledge of Malaria

The social-demographic characteristics of the participants in this study are presented in Table 1. A total of 400 individuals participated in the study. Out of the 400 subjects, 358 (89.5%) were males, and 42 (10.5%) were females. Majority 252 (63%) of these subjects were aged 18 to 37 years. Most of these respondents 328 (82%) were formally educated while few 72 (18%) were not. In this community, 240(60%) of the participants were farmers, 8 (2%) were civil servants, 88 (22%) were self employed (Traders, Carpenters e. t. c) and 64 (16%) were unemployed.

Table 1: Socio-demographic Characteristics of Participants at Bunkure Local Government Area

Socio-demographic characteristics	Frequency	Percentage (%)
Gender		
Male	358	89.5
Female	42	10.5
Total	400	100
Age		
18- 37	252	63
≥ 38	148	37
Total	400	100
Location		
Gurgiya	98	24.50
Bunkure	195	48.75
Jallabi	40	10.00
Falingo	35	8.75
Bono	32	8.00
Total	400	100
Educational status		
Primary	200	50.00
Secondary	50	12.50
Tertiary	78	19.50
Quranic	72	18.00
Total	400	100
Occupation		
Civil servant	8	2.00
Farmer	240	60.00
Self-employed	88	22.00
Unemployed	64	16.00
Total	400	100

The knowledge of the transmission, symptoms, and prevention of malaria is presented in Table 2. Generally, majority of the respondents were well informed about malaria. All the participants had heard of a disease called malaria, but not all of them had full knowledge of it. The knowledge of malaria was obtained primarily through family and friends and individuals' experiences 228 (57%), this is followed by health workers 104 (26%) and media 68 (17%). Majority 383 (95.75%) of the participants knew that mosquito bites are responsible for malaria transmission, but very few 7 (1.75%) associated it with body contact with infected person and 10 (2.5%) of them did not know. Moreover, 384 (96%) of the respondents had the right knowledge of the symptoms (fever, Headache, chill, weakness, vomiting e. t. c) of malaria while 16 (4%) of them mention others such as yellow eyes and urine. Stagnant water was reported as mosquito breeding area by most 334 (83.5%) of the respondents while 16 (4%) reported others (in sand and uncovered food) and 50 (12.5%) did not know. Furthermore, 318 (79.5%) of the respondents indicated that they avoided mosquitoes by using bed nets or insecticide, while 82 (20.5%) used mosquito repellant and coil.

Attitudes towards Malaria

Attitude of the participants toward malaria is presented in Table 3. Majority of the subjects 364 (91 %) regarded malaria as a serious disease, while 36 (9%) of them indicate that it is not serious. Malaria was reported as treatable disease by almost all 394 (98.5%) the participants, but very few 6 (1.5%) stated that it is not. However with regards to treatment seeking behaviour, a considerable number of the respondents 332 (83%) mentioned that they went to hospitals when they had an episode of fever, while 68 (17%) of the respondents self-medicated as a first-line of treatment for fever. The result of attitude in respect to who should be protected most against malaria, indicated that, 240 (60%) of the respondents knew is children and pregnant women, 126 (31.5%) stated children alone, 21(5.25%) mentioned pregnant women only and 13 (3.25%) stated adults.

Control Practices of Malaria.

The result on control practices of malaria is presented in Table 4. More than half 222 (55.5%) of the respondents indicated practicing environmental sanitation only as the action taken to stop malaria, 160 (40%) of them stated environmental sanitation and the use of bed net/ insecticide and 18 (4.5 %) reported screening of windows and doors only. Regarding the medicine used for the treatment of malaria, 354 (88.5%) of the respondents stated the use of anti-malaria drugs while 46 (11.5%) of them mention use of herbs. Majority 388 (97%) of the respondents used bed nets during the rainy season only while 12 (3%) of them used it in all season.

Respondents' Level of Knowledge about Malaria in Relation to their Gender

The respondents' level of knowledge about malaria with their gender is presented in Tables 5. There was significant difference in level of knowledge of malaria among the genders. The results shown significantly higher levels of knowledge among males than in females in terms of the role of mosquitoes in malaria transmission (males 350 (97.8%) and females 33 (78.6%) (χ^2 = 33.914, P = 0.0001), fever, chill, and vomiting as signs and symptoms of malaria (males 347 (96.9%) and females 37 (88.1%) (χ^2 = 7.636, P = 0.006), as well as stagnant water as the breeding site of mosquitoes (male 305 (85.2%) and female 29 (69%) (χ^2 = 7.115, P = 0.008). However, concerning the level of knowledge on the preventive measures, statistically (χ^2 =0.315, P = 0.574), there was no significant difference between males 286 (79.9%) and females 32 (76.2%).

Table 2: Knowledge of Malaria among the Participants at Bunkure Local Government Area

Variable	Frequency	Percentage (%)
Have you heard of malaria?		
Yes	400	100
No	-	-
Source of information		
Media	68	17.00
Health workers	104	26.00
Family and friends/individuals' experiences	228	57.00
Total	400	100
Malaria transmission		
Mosquito bites	383	95.75
Contact between two people	7	1.75
Do not know	10	2.50
Total	400	100
Signs and symptoms		
Fever, Headache, chill, weakness, vomiting	384	96.00
Others (yellow eyes and urine)	16	4.00
Total	400	100
Mosquito breeding site		
Stagnant water body	334	83.50
Others (in sand and uncovered food)	16	4.00
Do not know	50	12.50
Total	400	100
Prevention		
Cleaning environment, using bed nets/insecticide	318	79.50
Mosquito repellant & coil	82	20.50
Total	400	100

Table 3: Attitude of Participants towards Malaria at Bunkure Local Government Area

Variables	Frequency	Percentage (%)
Is malaria a serious disease?		
Yes	364	91.00
No	36	9.00
Total	400	100
Is malaria treatable?		
Yes	394	98.50
No	6	1.50
Total	400	100
What do you do when malaria occur?		
Go to hospital	332	83
Treatment at home	68	17
Total	400	100
People that should be protected most		
Children	126	31.50
Adult	13	3.25
Pregnant women	21	5.25
Pregnant women & Children	240	60.00
Total	400	100

Table 4: Control Practices of Malaria by the Participants at Bunkure Local Government Area.

Variables	Frequency	Percentage (%)
Action taken to stop malaria		
Environmental sanitation	222	55.50
Environmental sanitation and bed net / insecticides	160	40.00
Screening of windows and doors	18	4.50
Total	400	100
Medicine use for malaria		
Anti-malaria drugs	354	88.5
Herbs	46	11.5
Total	400	100
When do you use bed net?		
Rain season	388	97.00
All season	12	3.00
Total	400	100

Table 5: Respondents' Level of Knowledge about Malaria in Relation to their Gender.

Variables	Gender	
	Female No. (%)	Male No. (%)
Ever heard of malaria?		
Yes	42 (10.5)	358 (89.5)
No	-	-
Transmission of malaria		
Mosquito	33 (78.6)	350 (97.8)
Others	9 (21.4)	8 (2.2)
χ^2	33.914	
P	< 0.0001	
Signs and symptoms		
Fever, chill, headache & Vomiting.	37 (88.1)	347 (96.9)
Others	5 (11.9)	11 (3.1)
χ^2	7.636	
P	0.006	
Breeding sites		
Water body	29 (69)	305 (85.2)
Others	13 (31)	53 (14.8)
χ^2	7.115	
P	0.008	
Prevention		
Cleaning environment, using bed nets / insecticide.	32 (76.2)	286 (79.9)
Others	10 (23.8)	72 (20.1)
χ^2	0.315	
P	0.574	

DISCUSSION

The result of questions asked on the knowledge of malaria revealed that, majority the respondents had the right knowledge of malaria. This could have a positive impact on the malaria control programme. This is consistent with other similar studies in Nigeria (Abuja (Akaba *et al.,* 2013), Ondo State (Usman *et al.,* 2015), Delta State (Arute *et al.,* 2016)), Cameroon (Dickson *et al.,* 2017), Ethiopia (Abate *et al.,* 2013) and Zambia (Shimaponda-mataa *et al.,* 2017). However, the result is contrary to other similar studies reported in Zamfara (Hadiza *et al.,* 2015), Aliero, Kebbi State (Singh *et al.,* 2014), in northern Ghana (Adongo *et al.,* 2005) and Tanzania (Mazigo *et al.,* 2010). The main source of information was from family and friends or individuals' experiences with malaria, followed by health workers. This is consistent with studies in north central Nigeria (Olayemi *et al.,* 2012), in western Nigeria (Fatungase *et al.,* 2013), and Ghana (Mukaila *et al.,* 2016). This study revealed that majority of the respondents knew that mosquito is responsible for malaria transmission. This agrees with other previous similar studies reported across the World; in south western Nigeria (Ako-Nai and Adesiyan, 2012), Malawi (Masangwi *et al.,* 2012), Indonesia (Sanjana *et al.,* 2006), Saudi Arabia (Khairy *et al.,* 2017) and India (Gupta *et al.,* 2016). Nevertheless, the results also indicated that lack of awareness may contribute to misconceptions about transmission of malaria as few of the participants associated it with body contact with infected person and some did not know. Such misconceptions have also been reported in other similar studies in other states in Nigeria (Zamfara (Hadizat *et al.,* 2015), Ogun State (Idowu *et al.,* 2008), Oyo State, (Oladepo *et al.,* 2010; Babamale *et al.,* 2015)) and Republic of Guinea (Ruberto *et al.,* 2014). This study has demonstrated that almost all respondents had knowledge about malaria signs and symptoms. Majority of the respondents mentioned fever as the most common symptom of malaria and is consistent with observations from other similar studies in Nigeria (Bawa *et al.,* 2014; Akaba *et al.,* 2013; Okwa *et al.,* 2011, Burkina Faso (Yaya *et al.,* 2017), Uganda (Obol *et al.,* 2011) and Ethopia (Astatkie, 2010).This high level of awareness of the clinical features of malaria might be due to self experience of malaria, health education by health workers and increased access to mass media. Knowledge on the use of bed net or insecticide as a preventive measure against mosquito bite was high among the respondents in this study area. Similarly this was observed in other studies in Nigeria (Erhun *et al.,* 2005; Singh *et al.,* 2014; Akaba *et al.,* 2013), Ghana (Nyavor *et al.,* 2017), Ethiopia (Abate *et al.,* 2013), Malawi (Masangwi *et al.,* 2012) and Colombia (Forero *et al.,* 2014).

The result on attitude of the respondents towards malaria indicated that, majority believed that malaria is a serious disease, which is consistent with other studies in Nigeria (Isah *et al.,* 2007; Adedotun *et al.,* 2010) and other countries; Zambia (Shimaponda-mataa *et al.,* 2017) and South Asia (Regmi *et al.,* 2016). However, few percentages believed that malaria is not a serious disease. This suggests the need of more sensitization towards malaria to improve their attitude. Use of hospital for treatment and protecting children and pregnant women most from the disease, were stated by majority of the respondents. This is expected in this study, with 82% of the respondents having been formally educated. This is similar to other studies in Nigeria (Singh *et al.,* 2014; Arute *et al.,* 2016), Burkina Faso (Yaya *et al.,* 2017), Tanzania (Mboera *et al.,* 2007) and Ethiopia (Abate *et al.,* 2013).

Environmental vector control through elimination of the vector habitat at an early stage is an important primary preventive measure for malaria. In this study, the respondents indicated practicing environmental sanitation, but this was not seen in their practice as improper disposal of refuse that can lead to blockage of drainages and the presence of stagnant pool of water which serve as breeding sites for Anopheles mosquito vectors were noticed in the study area.

This is consistent with other studies in Nigeria (Iriemenam *et al.,* 2011; Olayemi *et al.,* 2012), Ethiopia (Fuge *et al.,* 2015), Tanzania (Mazigo *et al.,* 2010) and Eritrea (Habtai *et al.,* 2008). The use of anti-malaria drugs was higher among the respondents. Some of the respondents still mentioned herbs as the first treatment for malaria at home. This was similar with studies in Tanzania (Mazigo *et al.,* 2010) and Ghana (Ajayi *et al.,* 2008). This study revealed that, almost all (97%) the respondents used bed net only during the rainy season, considering the fact that it has to be regularly used, and properly deployed to be effective for malaria control. Studies had indicated that Low mosquito activity during dry season has particularly been noted to be a very important deterrent to ITN use in several communities in Nigeria, where the net is predominantly used for mosquito nuisance control, even as malaria transmission is stable and perennial in the communities (Ordinioha, 2007). This is supported by studies conducted in Burkina Faso (Okrah *et al.,* 2002), Ghana (Nyavor *et al.,* 2017) and Kenya (Atieli *et al.,* 2011).

CONCLUSION

Majority of the populace had knowledge on transmission (95.75%), symptom (96%) and prevention (79.5%) of malaria. Majority (91%) of the respondents considered malaria a serious disease and 83% had positive attitude toward the use of hospital for malaria treatment. Despite the high level of knowledge on the use of bed net, majority (97%) of respondents used it only during the rainy season. However, there was a gap in appropriate preventive practices in the study area.

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