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Level of Knowledge, Attitude and Treatment Practices for the Malaria among the Community Members of Four Selected Villages of Shinkafi Local Government Area of Zamfara State Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author SS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AYB and HMB managed the analyses of the study. Authors MA and JS managed the literature searches. All authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Aim: Malaria disease causes severe lost of lives in many parts of Nigeria due poor knowledge, attitude and treatment practices among the people. The aim of the present study is to investigate the level of knowledge, attitude and treatment practices for the malaria among the people in four selected villages of Shinkafi local government area of Zamfara State.
Study Design: This study was designed to target 400 community members, 100 individuals each from Badarawa, Jangeru, Kware and Kurya Villages of Shinkafi.
Place and Duration of Study: Badarawa, kware, Jengeru, and Kurya communities of Shinkafi local government area of Zamfara State, between August 2017 and March 2018.
Methodology: Respondents were selected randomly and individual based questionnaire was

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administered to each participant, each participant was asked to fill the questionnaire based on his knowledge, the data obtained was analyzed using descriptive statistics and presented as percentage in tables.

Results: Results of the present study indicated that, majority of the participants (73.25%) had the knowledge of malaria, most of the people in the study areas (93.75%) did not have any information on causes of malaria, only 49..50% are receiving help from the government and only 45.5% of the respondents used repellants for control of mosquito vector while 70.25% of the respondents educate their children on malaria. Hence, attitudes toward prevention and control of the malaria was poor due to inadequate facilities for the treatment and control of malaria in the study area as indicated from liked questions of the questionnaire.

Conclusion: In conclusion, although majority of the people were found to have knowledge of malaria in the study areas, it was observed that, most of the members in the study areas were lacking good practice toward prevention and control of malaria due to inadequate facilities and poor knowledge for the prevention and control.

Keywords: Malaria; level; attitude; knowledge; community; members.

1. INTRODUCTION

Malaria is a protozoan disease that cause major public health problem [1]. About 3.2 billion people are at risk of malaria infection globally and an estimated 212 million cases were reported worldwide, leading to 429,000 deaths in 2015, particularly in parts of sub-Saharan Africa and South Asia, Latin America and the Middle East countries [1], In 2016, approximately 216 million clinical cases and about 450,000 deaths were reported in worldwide [2]. Although malaria is declining in Africa, in some areas the burden of malaria has remained unchanged or increased [1].

Malaria has been major public health problem in Nigeria where it accounts for more cases and deaths than any other country in the world [3]. Malaria is a risk for 97% of Nigeria's population. The remaining 3% of the population live in the Malaria free highlands. There are an estimated 100 million Malaria cases with over 300,000 deaths per year in Nigeria. This compares with 215,000 deaths per year in Nigeria from HIV/AIDS. Malaria also contributes to an estimated 11% of maternal mortality [4].

Malaria is transmitted by the bite of an infective female Anopheles mosquito, transfusion of blood from infected persons and use of contaminated needles and syringes [5]. Anopheles mosquitoes capable of transmitting malaria are found throughout Nigerian Province, but distribution may vary between districts based on environmental factors influencing mosquito suitability [6].

Infection with Malaria is increasing in highland areas partly due to climatic changes including high rainfall patterns, new development projects such as dams and agricultural irrigation works because these can create environmental changes more conducive to mosquito breeding and malaria transmission [7].

The burden of malaria infection was reported by Federal Ministry of health as major top disease in the Nigeria [7], as a result of many factors which may include lack of information on the knowledge, attitude and treatment practice of malaria infection among the people, especially those that are living in village communities. Hence, the results of the present study provided with level of knowledge, attitude and treatment practice among the people of four selected village communities of Shinkafi local government area of Zamfara state. We hope that; the outcome of this research will encourage the concerned authority to provide with more facilities and other methods of given awareness that will be more helpful in prevention and control of malaria among the people in the study area and the country in general.

2. MATERIALS AND METHODS

2.1 Study Area

The study was conducted in some villages around Shinkafi, which is a Local Government Area in Zamfara State, Nigeria. Its Headquarters is in the town of Shinkafi at 13°03′00″N 6°29′004″E with an area of about 674 km^2 and population of 135,649. It shares boundaries with Isa Local Government Area (Sokoto State) and Niger Republic from the north, Zurmi Local Government Area to the South and South-East, Maradun Local Government Area and Raba

Local Government Area (Sokoto State) by the west. Distance from the State Capital, Gusau is approximately 116 km [8].

Four villages were selected, these include Badarawa (6.52N12. 89E), Kware (6.59N 12.97E), Kurya (6.65N, 12.98E) and Jangeru (6.49N 12.98E). These villages are 10km, 26km, 29 km and 7 km respectively away from Shinkafi metropolis. The villages fall within Badarawa, Kware, Jangeru and Kurya districts in Shinkafi Local Government Area of Zamfara State. The unique landscape feature associated with these villages is that they are adjacently to rivers. The rivers are significantly seasonal even though they often flood the surrounding villages annually (September in every year) when the rainfall is at its peak, the average amount of rainfall in the areas fluctuates between 36 and 80 millimeters in a year, the people of the selected villages are predominantly Hausas and Fulanis, however other tribes such as Igbo, Yoruba, Tivs and Zabarmawa are also found. The vegetation is Sudan Savannah type characterized by plentiful short grasses of about 1.5 -2 m and scarce short shrubs/trees that are hardly above 10 m tall. The texture of the topsoil is sandy clay loam soil and average monthly dry season temperature is above 35°C but significantly drop in the harmattan periods which stretch from November to February. During this period, the ambient air mass is very dry and cold, dusty during the day and chilly at night. During this period night temperature can drop to as low as between 18 and 21°C. In the rainy season months of July to September, temperature ranges about 22 -28°C [9].

2.2 Sample Size Estimation

Sample size was calculated using a formula described by Murray et al. (2015).

Hence, 100 community members from each village were recruited which gave grand total of 400 participants

2.3 Study Design and Respondents

The study was designed to target a total of 400 community member from four (4) selected villages of the ten (10) districts of Shinkafi Local Government. Meanwhile, individual(s) who are unwilling and those who either refused to return questionnaires were not included in the survey.

Simple random sampling technique by assigning number to each individual in each village was employed, the participants were asked to pick the papers and any community member who gets number in his/her paper was requested to fill the questionnaire based on his/her knowledge.

2.4 Questionnaire Administration

The individual-based questionnaires were administered to each community members who wished to participate in the study. The questionnaires were administered to collect information from community members on their sex, age, occupation and simple investigative questions that are related to knowledge attitudes and treatment practices of malaria infection among others as well as the information on treatment, prevention and control practice by the people if any to fight against malaria infection in the community.

2.5 Statistical Analysis

Data obtained from the survey was analyzed with SPSS version 20.0 the data was present as percentage frequency in the tables.

3. RESULTS

Results of the knowledge attitude and treatment practices of the participants showed that, 73.25% of participants knew malaria, 70.25% educate their pupils on malaria, 59.25% received information on malaria and 78.75% of the respondents' needed more information on malaria (Table 1).

Majority of the respondents (83.50%) don't know the sign and symptom of malaria, 24.00% acknowledged vomiting as sign of malaria, 23.25% believed fever is a sign and symptom of malaria, 19.50% agreed with sweating and only 16.75% acknowledged loss of appetite (Table 2).

Results of the present study showed that, majority of the respondents (88.50%) do not seek treatment for their children when infected with malaria, 25.75% treated their children at home when infected with malaria, 24.75% go to pharmacy, 21.75% of the respondents went to hospital and only 9.50% of the community members used traditional medicine (Table 3).

Considering the type of medicine given to the children when infected with malaria, present study showed that, most of the respondents

(88.50%) don't know name of medicine for the treatment of malaria, 28.00% of the community members mentioned chloroquine, 24.25% used paracetamol, 14.25% were used Arthermetre, 9.50% used herbs and only 5.75% used Artesunate for the treatment of malaria (Table 4).

Present study showed that, 39.25% sourced treatment by themselves, 16.25% of the respondents received help from government organizations, 13.5% received help from parents-teachers associations (PTA), 11.50% don't know, 6.75% received help from community leaders, 4.75% received help from non-governmental organizations and only 1.25% of the respondents received help from businessmen (Table 5).

Present study showed that, majority of the participants (92.75%) had not received any information on malaria, 36.25% of the community members received information from radio, 21.75% from community leaders, 16.50% from local government, 5.75% from television and only 3.00% received information from newspapers (Table 6).

Results of the present study showed that, 49.50% of the respondents were sometimes receiving help from governmental and non-governmental organization for the treatment, prevention and control of malaria, 27.25% of the respondents are always receiving help and 23.24% of respondents never received help for the treatment, prevention and control of malaria infection in the study area. Similarly, 54.75% of the participant sleep under net with their children, 24.50% always, and 20.75% never slept under net with their children. In addition, 46.75% visited health care center sometimes for the treatment of malaria, 31.00% never visited health care centers when their pupils infected with the malaria and only 22.25% of the community members always visits of health care centers when their children infected with malaria. Nevertheless, 67.25%, 24.25% and 8.50%, of the community members drained stagnant water, sometimes never and always respectively in their homes. It was also observed that, 47.25%, 31.25% and 21.50%, of the community members cleared bushes around their homes sometimes, never and always, respectively. Finally, 45.50% of the community members always used repellants for control of malaria infection 30.50% never used repellants while 24.00% sometimes used repellants for control malaria in their houses (Table 7).

Table 1. Knowledge of malaria attitude of the community members on educating

Response	Yes	Percentage (%)	No	Percentage (%)
Knowledge	293	73.25	107	26.75
Child Educating	281	70.25	119	29.75
Information	327	59.25	73	18.25
Need more information	315	78.75	85	21.25

Table 2. Community perception on signs and symptoms of malaria infection

Sign and Symptoms	Yes	Percentage (%)	No	Percentage (%)
Don't know	66	16.50	334	83.50
Vomiting	96	24.00	304	76.00
Fever	93	23.25	307	76.75
Sweating	78	19.50	322	80.50
Loss of appetite	67	16.75	333	83.25

Table 3. Community perception pertaining source of treatment of their children when infected with malaria

Source of treatment	Yes	Percentage (%)	No	Percentage (%)
Do Nothing	46	11.50	354	88.50
Home	103	25.75	297	74.25
Pharmacy	99	24.75	301	75.25
Hospital	87	21.75	313	78.25
Traditional medicine	38	9.50	362	90.50

Table 4. Type of treatment given to the children with malaria

Type of medicine	Yes	Percentage Yes (%)	No	Percentage No (%)
Chloroquine	112	28.00	288	72.00
Paracetamol	97	24.25	303	75.75
Arthermetre	57	14.25	343	85.75
Herbs	38	9.50	362	90.00
Artesunate	23	5.75	377	94.25
Don't know	46	11.5	354	88.50

Table 5. Sources of help with respect to malaria

Source of help	Yes	Percentage Yes (%)	No	Percentage No (%)
Self	157	39.25	243	60.75
GO	65	16.25	335	83.75
PTA	54	13.50	346	85.50
Community leaders	27	6.75	373	93.25
NG	19	4.75	381	95.25
Businessmen	5	1.25	395	98.75
Don't know	46	11.50	354	88.50

Key
GO = Governmental organizations
NGO = Non-governmental organizations
PTA = parents-teachers association

Table 6. Community members perception on source of information on malaria

Source of information	Yes	Percentage Yes (%)	No	Percentage No (%)
Radio	145	36.25	255	63.75
Community leaders	87	21.75	313	78.25
Local government	66	16.50	334	83.5
Television	23	5.75	377	94.25
News papers	12	3.00	388	97.00
Don't know	29	7.25	371	92.75

Table 7. Community members perception on control measures against malaria infection

Status	No. Always (%)	No. Sometimes (%)	No. Never (%)
Receiving help form GO	109 (27.25)	198(49.50)	93 (23.24)
Sleeping under net	98 (24.50)	219 (54.75)	83 (20.75)
Visiting health care centers	89 (22.25)	187 (46.75)	124 (31.00)
Draining of stagnant water	34 (8.50)	269 (67.25)	97 (24.25)
Clearing bushes around houses	86 (21.50)	189 (47.25)	125 (31.25)
Used of repellant	182 (45.50)	96 (24.00)	122 (30.50)

Key
GO = Governmental Organization

4. DISCUSSION

The results of the present study showed a local awareness of the malaria by the majority parents/guardian of the pupils in the study area and that majority of them educate their children on malaria. In the present study, majority of the community members do not know signs and symptoms of malaria. Some respondents associate vomiting with malaria. While other mentioned fever as a sign of malaria, sweating was also mentioned by others, while least of the participants mentioned loss of appetite as a sign of malaria. This finding corroborates those from previous studies [10,11]. The authors suggest aforementioned signs and symptoms as common ones identified by respondents in their studies.

Findings from the present study revealed a local awareness of the presence of malaria infection.

The long-term experience of the pathological conditions associate with malaria infection could be the reason why the majority of the community members became aware of malaria. Malaria prevention and control programs such as Seasonal Malaria Chemoprevention (SMC) and Roll Back malaria launched by the government could also be the reason for the knowledge of malaria in the study area. This agrees with finding of the [12], where they suggest that majority of the respondents had knowledge of malaria infection as they obtain information on malaria from health workers.

Results from this study revealed that majority (83.5%) of the respondents do not know signs and symptoms of malaria infection. This might be due to lack of interest of the most of the community members in getting information on signs and symptoms of malaria. This is in contrary to the finding of [12], where they reported awareness of the respondents on the common signs and symptoms of malaria infection as they obtain information on malaria from health workers, newspaper, and other sources.

The finding from the present study clearly demonstrated that majority of the respondents (88.50%) do not seek treatment for their children when infected with malaria despite the availability and wide use of health facilities and traditional forms of treatment. This could be attributed to some cultural beliefs that they do not seek treatment for diseases. However, Laar et al., [13] in their study they observed that the respondents, the first course of action when child suffered from malaria was to consult a health facility.

Despite the availability of malaria control programs, results of the present study revealed that majority of the respondents receive no information on malaria. This could be due to the fact that majority of them are farmers and spend much of their time in the farm, as such they were not around during the time information on malaria is spread. This is in contrast with the finding of Mazigo et al., [14] in which they observed community's main source of information on malaria as health workers.

5. CONCLUSION

Although majority of the people were found to have knowledge of malaria in the study areas, it was observed that, many of them had poor attitude toward malaria disease prevention and control and treatment practices were inadequate in the study areas.

CONSENT

We received consent from each participant and their guidance before conducting the research, when seeking the consent from the research participants in each school, the objectives and procedures of the study were clearly explained to them in local language (Hausa). Participants were informed that they will be withdrawn from the study without any consequences as a result of any fault. Hence, signature or thumb-print was used to indicate that each participant and his guardians/parents agreed to participate before starting the survey.

ETHICAL APPROVAL

Introduction letter was collected from Head of the Department (Biological Sciences), Usmanu Danfodiyo University, Sokoto. Permission was received from Zamfara State Ministry of Health ethical research committee, Education Secretary, Shinkafi Local Government Education Authority, District Heads of the Communities and Head Masters of the primary Schools.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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