

How Knowledge, Attitude and Practices affects Lymphatic Filariasis in parts of Ose Local Government Area, Ondo State Nigeria

ABSTRACT

The amount of knowledge possessed by community members will determine the role it plays in combating Lymphatic Filariasis (LF). Our study assessed the knowledge, attitude and practices (KAP) towards LF in parts of Ondo State, Southwestern Nigeria. Structured questionnaires on KAP towards LF were administered to 1,090 consented respondents with their responses been graded and scored. Results were presented using descriptive statistics. Results revealed respondents knowledge on LF was poor as only 7(4%) had correct knowledge on LF. However 757(69.5%) and 147(13.9%) of the respondents admitted that LF patients could be non-productive and could marry an LF-chronic manifested person respectively. In relation to practices towards LF, 594(54%) of the respondents receiving drugs that had been distributed for preventive chemotherapy. Further analysis showed that although the ownership of Long Lasting Insecticide Nets (LLINs) was high with 862 (72%) respondents being in possession of LLINs, its utilization was low with only 267 (25%) sleeping under an LLIN. In conclusion, the poor knowledge on LF could have contributed to the presence of LF in the study area. Continuous efforts by educating community members in the need to fight against LF should be embarked on by the health stakeholders.

Keywords: Attitude, Knowledge, Lymphatic Filariasis, Practices, Ondo State

INTRODUCTION

Lymphatic Filariasis (LF) caused by the nematode *Wuchereria bancrofti* is one of the neglected tropical diseases (NTDs) endemic in Nigeria (NLFEP, 2019). It is transmitted by the infected female *Anopheles* mosquitoes in most parts of Africa (WHO, 2022). LF infection cuts

across all ages groups in both females and males. Infection with the disease could be described to be asymptomatic in humans at the beginning in which later after numerous years the manifestation of the chronic stages (elephantiasis, hydrocele and lymphoedema) are gradually observed to be visible. According to NLFEP (2019) with an annual loss of almost \$1 billion and impairing economic activities of up to 88%, LF has shown that it has a social and economic impact worldwide. The current practices by the Global Program to Eliminate Lymphatic Filariasis (GPELF) created by the World Health Organization and private stakeholders in the year 2000 indicates that by pushing for the integrative control of NTDs which involves chemotherapy (administration of albendazole (ALB) and ivermectin (IVM) for at least five years to a endemic area), morbidity management and disability prevention programme for those with visible chronic manifestations and controlling of vectors, eliminating LF by 2030 should be achievable.

The assessing of knowledge, attitude and practices (KAPs) of a community towards LF is one way of understanding the disease as knowledge plays a critical role in the preventing LF (Al-Abd et al. 2014). Some of the studies reported to have assessed knowledge KAPs in relation to LF are Cameroun (Sumo et al. 2021), Ethiopia (Abebe et al. 2007), Ghana (Antoi-Aboagye et al., 2015), India (Aswathy et al. 2009, Agrawal, 2014, Medoju et al. 2019), Indonsesia (Widawati et al. 2019), Malawi (Keliias et al. 2010), Malaysia (Al-Abd et al. 2014), Nepal (Adhikari et al. 2022) and in the Philippines (Wynd, 2007, Oducardo, 2014). The role of mosquitoes in transmitting LF is underestimated as awareness on the importance of reduction of contacts with the transmitting vector in order to prevent the disease is not encouraging (Wynd, 2007).

In Nigeria, surveys have been conducted for KAP on LF disease across States namely Benue (Omudu and Okafor, 2007, Omudu and Okafor, 2008, Omudu and Okafor, 2011, Omudu

and Ochoga, 2011), Ebonyi (Udujih et al. 2012, Amaechi et al. 2013), Kano (Dogara et al. 2014, Hafizu et al. 2023), Oyo (Jaiyeola et al. 2022), Plateau (Hopins et al. 2022, Azzuwut, 2011) and Taraba (Ogbonnaya and Okeibunor, 2005, Badaki, 2010). But there is still paucity of information on KAP in the country and this might hinder efforts being made by the stakeholders in eliminating LF in the country, considering that according to NLFEP (2019), 583 Local Government Areas (LGAs) out of the 774 LGAs in Nigeria have been mapped to be LF endemic.

Effective health education and involvement of community members and health stakeholders play significant roles in the success of eliminating LF so therefore there is the need to evaluate the level of knowledge of the population about LF together with their attitudes and practices. In Ondo State, Adekunle et al. (2016) have reported the presence of chronic manifestations in parts of Ose Local Government Area (LGA). Considering the report on the presence of LF in the study area, this study went ahead to assess the KAPs of the community members towards LF.

MATERIALS AND METHODS

Study area

The study area was located in Ose LGA with a land mass area of 1,465km² in Ondo State (located in the South-western Nigeria). Its head – quarters located at Ifon. It consists of twelve major towns and ninety – one adjoining villages surrounded by vegetation which consists of Okeluse, Ijagba, Umoru, Ute, Ifon in the North and the Irekari district. The rainforest is the vegetation found within the environment.

Community consent

A consent letter was gotten from the Federal Medical Centre, Owo, Ondo State, Nigeria. An awareness visit was made in the company of the Health officers associated with the study

area in the LGA. The study design which was cross-sectional was carried out in Idoani, Idogun and Imeri communities. All community leaders and members in these communities were sensitized on the study and what it entails in their local dialect and consented informal consents were obtained from them as dates were fixed.

Questionnaire administration

A structured and close-ended questionnaire which had been pre-tested for reliability and validity was translated into Yoruba and used to obtain information from consented respondents who were between the ages 15 and 80 years old. Our questionnaire used in obtaining data included; knowledge of LF, attitude towards LF and practices towards LF. The knowledge on LF that was scored included; ever heard of LF, the causes of LF, how it is transmitted, LF mode of treatment for elephantiasis and hydrocoele and how it can be prevented. Attitude of the respondents that was scored; do they think they can acquire LF, reside with LF patients, thinking that LF patients can be as productive as non-infected individuals, shower attention and care on LF patients and marry someone having elephantiasis or hydrocoele. Practices of the respondents towards LF that was scored were; ever heard of Mass Administration of Medicine (MAM), ever received drugs during MAM, usage of Long Lasting Insecticide Net (LLIN) and if not using LLIN, how are mosquitoes prevented within their abode.

Data analysis

Data collected was analyzed using the Microsoft Excel. Descriptive statistics which includes; Frequency and finding percentages were presented in tables. For the questionnaire, a score index was created as highlighted in the questionnaire administration part above. Each correct and incorrect answers were scored 1 and 0 respectively. The grades for scoring was Good

= ≥ 4 ; Fair = 3 and Poor = ≤ 2 (this was used for knowledge on LF and attitude towards LF). For practices towards LF, the grades for scoring was Good = ≥ 3 ; Fair = 2 and Poor = ≤ 1 .

RESULTS

Knowledge on LF amongst the respondents

A total of one hundred and seventy-seven (16%) claim to have heard of the LF disease. Out of the one hundred and seventy-seven people that had heard of the disease called LF with only 83 respondents (8%) having seven (7) different local names for it (Table 1). Respondents source of information was through the rural health workers which was highest 80(45%) and least been through the town criers (4%) (Table 2). A total of 85(48%) and 80(45%) of the informed respondents believed that the disease could be detected through physical examination and blood examination respectively (Table 2).

Table 1: Respondents that had heard of LF and the local names they used in identification

	Frequency (Percentage)
Ever heard of LF?	
Yes	177(16)
No	913(84)
Total	1090(100)
Local Yoruba Names	
Arawu	2(0.2)
Ese-osofa	1(0.1)
Ese-wuwo	53(4.9)
Iba iponju	1(0.1)
Ipake	1(0.1)
Awuse/Iwuse	24(2.2)
Okele	1(0.1)
No response	94(8.6)
Non-applicable	913(83.8)
Total	1090(100)

LF - Lymphatic Filariasis

Attitude towards LF amongst the respondents

The attitude of the respondents to the disease in the study area was shown in Table 3 below. Almost 91% of the respondents felt they were not at risk of being infected with LF. On living with an LF patient, most of the respondents said they could live in the same abode (79.1%) with an LF patient. As regards productivity of LF patients, majority of the respondents (69.5%) thought that LF patients could never be as productive as non-infected individuals. A huge proportion of the respondents showed that LF patients deserved attention (97.9%) and encouragement (93%). Most (85.9%) of the respondents dismissed the idea of marrying someone with hydrocele and elephantiasis.

Table 2: Respondents source of information and how it can be detected

	Frequency (Percentage)
Source of information	
Friend/ Neighbor	7(4)
Rural Health Workers	79(45)
Poster	26(15)
Television/Radio	35(20)
Relation	19(11)
In school	4(2)
Town Crier	7(4)
Total	177(100)
How can the LF disease be detected?	
Blood examination	80(45)
Physical examination	85(48)
Through prayers	3(2)
No response	9(5)
Total	177(100)

LF - Lymphatic Filariasis

Practices of respondents towards LF

Of the 1090 respondents, 771(71%) had heard of the word Mass Drug Administration (MDA) while 29% were not of the MDA program (Table 4). More than half of the respondents (55%)

reported that they had received drugs distributed during MDA while 46% claimed to have not received drugs (Table 4). It was observed in Table 5 below that although 862(79%) of the respondents possessed LLIN, 790(72%) of the respondents did not make use of the LLINs at all, while 3% said they made use of the nets but were not consistent with using them. Out of the 790 respondents that did not make use of LLINs, prevention of mosquito bites was through spraying of mosquito insecticides 269(43%) with the least respondents 9(1%) saying they did absolutely nothing to prevent themselves from mosquito bites.

Lastly in Table 6, it was observed that respondents who had good knowledge on LF were just 7(4%) with majority (49.7%) of the respondents having poor knowledge of the disease. For the overall scoring on the attitude about LF disease, majority of the respondents (51.6%) indicated that their attitude towards the disease would be fair. Respondents who showed poor practices towards the disease was the highest with 48.6% out of the 1,090 respondents.

Table 3: Attitude of the respondents to LF

	Frequency (Percentage)
Can you acquire LF?	
Yes	99(9.1)
No	991(90.9)
Maybe	0(0)
Total	1090 (100)
Can you reside with an LF infected person in the same house?	
Yes	862(79.1)
No	115(10.6)
Maybe	113(10.3)
Total	1090 (100)
Do you think LF patients are as productive as non-infected individuals?	
Yes	329(30.2)

No	757(69.5)
Maybe	4(0.3)
Total	1090 (100)
Can you shower attention and care on LF-infected individuals?	
Yes	1067(97.9)
No	23(2.1)
Maybe	0(0)
Total	1090 (100)
Can you marry someone with hydrocele/elephantiasis/lymphedema?	
Yes	147(13.9)
No	934(85.9)
Maybe	9(0.4)
Total	1090 (100)

LF - Lymphatic Filariasis

Table 4: Respondents opinions on the awareness of Mass Administration of Medicine in the study area

	Frequency(Percentage)
Awareness of Mass Administration of Medicine	
Yes	771(71)
No	319(29)
Total	1090(100)
Have you ever received drugs distributed during Mass Administration of Medicine?	
Yes	594(54)
No	496(46)
Total	1090(100)

Table 5: Respondents usage of LLINs and mosquito prevention

	Frequency (Percentage)
Do you possess LLIN?	
Yes	862(79)
No	228(21)
Total	1090(100)
Do you sleep under the LLIN net?	
Yes	267(25)
No	790(72)
Sometimes	33(3)
Total	1090(100)
How do you prevent mosquitoes from biting you?	
Close windows and doors by 6pm	82(11)
Spraying of mosquito insecticides	269(34)
Use of mosquito incense	203(26)
Use of broom to wipe down the walls	79(10)
Constructed window nets and door nets	78(9)
The use of hand fan	1(1)
There are no mosquitoes in my house	69(8)
I do nothing	9(1)
Total	790(100)

LLIN- Long Lasting Insecticide Treated Net

Table 6: Overall scoring of respondents on KAP towards LF in our study

Grades	Variables		
	Knowledge of Respondents on LF (%)	Attitude of Respondents towards LF (%)	Practices of the respondents towards LF (%)
Good	7(4)	32(3)	166(15.2)
Fair	82(46.3)	563(51.6)	394(36.2)
Poor	88(49.7)	495(45.4)	530(48.6)
Total	177(100)	1090(100)	1090(100)

LF – Lymphatic Filariasis; % - Percentage

DISCUSSION

The knowledge of the LF amongst the populace of the study area was very poor with 16% saying they had at some point heard of the disease. This showed the general low awareness of the

disease in the study area. The low awareness about the disease among respondents was similar to studies reported by Ogbonnaya and Okeibunor (2005), Udujih et al. (2012), Okorie et al. (2015) and Jaiyeola et al. (2022) in Nigeria. This was different from a study reported by Amaechi et al. (2013) in Ebonyi State where majority of the respondents had good knowledge of LF. Majority (45%) of the informed respondents attributed their source of knowledge on LF to the rural health workers, media and posters posted on the walls of the health-centres located in their vicinities. This could be as a result of increased efforts by the Primary Health Care workers in collaboration with health agencies/stakeholders in raising the awareness of LF by the use of posters which could be seen on the walls at the Health Centers. These also corroborated findings in parts of Africa about the source of LF knowledge as reported in Ayisi-Boateng (2013) and Jones et al. (2015) in Ghana and Tanzania.

On the knowledge of LF, an overall 4% of the respondents had a good knowledge on LF infection rate which could be termed poor. Also, Jaiyeola et al. (2022) and Hafizu et al. (2023) reported poor knowledge on LF amongst community members in Kano and Oyo States. The low insight of knowledge on the disease in our study was in line with studies by Adhikari et al. (2022), Hafizu et al. (2023) and Okorie et al. (2015) who reported low to absent knowledge on the transmission of LF by mosquitoes. This finding was not in line with studies reported by Al-Abd et al. (2014) Nzeako et al. (2016) and Jones et al. (2015) where more than 50% respondents indicated that mosquitoes transmitted LF. Respondents were of the opinion that LF could be prevented through; the use of MAM, vector control, being cautious with people in the course of interaction and lastly being prayerful. This was slightly different from Jones *et al.* (2015) where respondents reported that LF could be prevented by the use of MDA drugs and vector control

only. Jaiyeola et al. (2022) and Udujih et al. (2012) have reported in parts of Nigeria a low to zero knowledge on the preventive measures of LF.

Regarding their attitude to LF disease, majority of the respondents felt they were not at risk of being infected with LF at all. These findings were similar to reports by Ogbonnaya and Okeibunor (2005) and Azzuwut (2011) in Nigeria where a low perception of personal susceptibility to LF was identified among the people. In the study area, living and working with LF patients wholeheartedly was said to be consequential by the respondents (79.1%) as they believed that LF patients needed love and care. This finding was similar to Azzuwut (2011) where 85.1% said they could eat, live or work with LF patients. As regards productivity, a little above average (69.5%) of the respondents believed LF patients could never be as productive as healthy individuals due to stigmatization. However 0.3% were of the opinion that they could be productive but as time goes on they will become redundant This was in contrary to the 60.3% reported by Azzuwut (2011) in Nigeria who thought LF patients can be productive as healthy individuals. On marriage, majority (85.9%) of the respondents said they could never marry someone who exhibited such symptoms. Very few respondents (0.4%) in this study said they could remain married to such a person as long as there was love; citing situations like people who did not exhibit symptoms during courtship and later on after so many years in marriage symptoms now been visual and the opinion of abandoning such a partner at such a time would be cruel. Women and men with LF disease have limited prospects (Azzuwut, 2011, Omudu and Ochoga, 2011, Oducado, 2014).

Impressively, 71% of the respondents had heard of MAM before at one time or more in their lifetime and 54% of them had received the drugs during the program. This was similar to Azzuwut (2011) where more than half of the respondents had heard of the program and had

received ALB. This was in contrast to Al-Abd et al. (2014) where knowledge on MAM was 35%. Most of the respondents who had received ALB and IVM were skeptical about drug use which concerned the side effects (body itching, fever, body swelling and drowsiness) they exhibited when these drugs were previously ingested. Few of the respondents said they did not see the need to take such drugs when they were not suffering from the disease. These findings were similar to studies by Azzuwut (2011) and Oducado (2014) that identified factors that affect drugs uptake.

On Long Lasting Insecticide Nets (LLINs) that had been distributed in the study area, there was a high ownership with majority (79%) of the respondents acquired LLINs through government intervention with good knowledge of what the net is meant for. However, possession of LLIN did not translate to usage as a proportion of the net owners (25%) actually use the net. as it was observed that respondents exhibited poor practices towards LF infection. The main reason given by the respondents was feeling heat while sleeping under the net, the high concentration of pyrethrum imbedded in the LLINs (as washing of the nets three consecutive times as advised by the health workers did not help) and they were of the opinion that inhalation of the pyrethrum was not good for their health. Mukhopadhyay et al. (2008) in India reported low ownership (16.79%) and low utilization (9.02%) of LLINs mosquito nets. Unlike Abebe et al. (2008) who reported high utilization by the (85.7%) of the respondents in Ethiopia.

On how they prevented mosquitoes, most of the respondents relied on behavioral practices which included; spraying of insecticides and the use of mosquito repellent incense in their various abodes, the applying of repellent creams to skin, closing of the doors and windows every day before 6pm and wiping down the walls with the help of a broom. The disturbing fact that a

proportion of the respondents were of the opinion that they were no mosquitoes in their environment could be attributed to their ignorance on the role of the vectors in their environment. In conclusion, low compliance to preventive measures which includes the use of LLINs could increase the risk of exposure to mosquito bites among the population. Constant Health education on LF should be embarked on by Stakeholders.

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