



# Perceptions and socio-economic burden of Lymphatic filariasis in Fakai local government area of Kebbi state, Nigeria

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## Abstract

**Background:** Nigeria is the second most endemic country in the world for Lymphatic filariasis, after India. Control efforts have been ongoing since the year 2010 but is often hampered by poor community awareness and compliance to Mass Drug Administration.

**Objective:** The aim of this study was to assess the perceptions and socio-economic burden of Lymphatic filariasis in Fakai LGA of Kebbi State, Nigeria, in order to develop disease control and intervention strategies.

**Methods:** A standardized questionnaire was adapted and a scale of measurement was developed. The methodology was quantitative and the study design was cross-sectional. A sample of 423 respondents was selected which include affected and unaffected members of the communities.

**Findings:** Knowledge about the cause, mode of transmission and preventive measure was very poor. Majority, comprising 68.9% of affected and 39.3% unaffected respondents attributed the cause to witchcraft. None believed it is caused by mosquito bite. On the other hand, they demonstrated relatively high awareness of the socio-economic implications of the disease as majority (56.0%) believed the disease decreases income of sufferers.

**Conclusions:** They are at high risk of LF. There is need for knowledge-based awareness for effective management of the disease.

**Keywords:** knowledge, awareness, LF, Fakai LGA

## Introduction

Lymphatic filariasis (LF) is a major cause of permanent disability in many tropical and subtropical countries of the world that if left untreated, may lead to lymphedema and hydrocele. This disease remains an important public health problem that inflicts a considerable social and economic burden on many countries in the tropics and subtropics [1] where it affects primarily poor rural communities [2].

In 2000, over 120 million people were infected; more than 1.3 billion people at risk and over 40 million people lived with chronic disease in 81 countries [3]. Currently, due to the success of elimination programme, 863 million people in 47 countries worldwide remain threatened and require preventive chemotherapy to stop the spread of this parasitic infection [4]. Nigeria is one of the countries in which Lymphatic filariasis is an endemic disease. North-west region of Nigeria has the highest Lymphatic filariasis burden [5]. Economic and Social impacts of the disease on infected individuals is of great concern, as it mostly affects individuals at their youthful and productive stage, thereby rendering them helpless and less likely to contribute to the society economically [6].

## Materials and methods

### Study area

The study was conducted in Argungu LGA, which is endemic for Lymphatic filariasis and was declared for MDA since 2010.



Fig 1: Map of Kebbi State showing the study area

### Study population/design

The study population are males and females aged fifteen years [7] and above resident in Argungu LGA.

The study was a descriptive, cross – sectional one.

**Sampling technique**

Random sampling technique was used. Six villages were selected out of about 42 in the LGA. All the villages were listed and the six were selected by balloting. Affected and unaffected individuals who volunteered or gave their consent were included in the study.

**Data collection technique**

Both quantitative and qualitative techniques were used. Community members aged fifteen (15) years and above were included. This is due to the fact that the disease chronic stage manifests later in life.

**Quantitative method:** Collection of data was done using semi-structured pre-tested questionnaires that contain mostly closed – ended questions.

The questionnaire consists of three sections.

First section sought information on the respondents demographic data. The second and third sections sought information on KAP and Socio Economic and psycho social impact. Section A and B were for all participants while Section C was for sufferers only.

**Qualitative method:** Qualitative data was collected for only those will visible signs of lymphatic filariasis. They were interviewed on psychological, psychosocial, economic and matrimonial aspects of the disease.

**Data analysis**

Data cleaning for errors, completeness and consistency checks were done. Information collected were fed into statistical package for social sciences (SPSS version 21) for analysis and was presented using frequency tables, histogram and percentages.

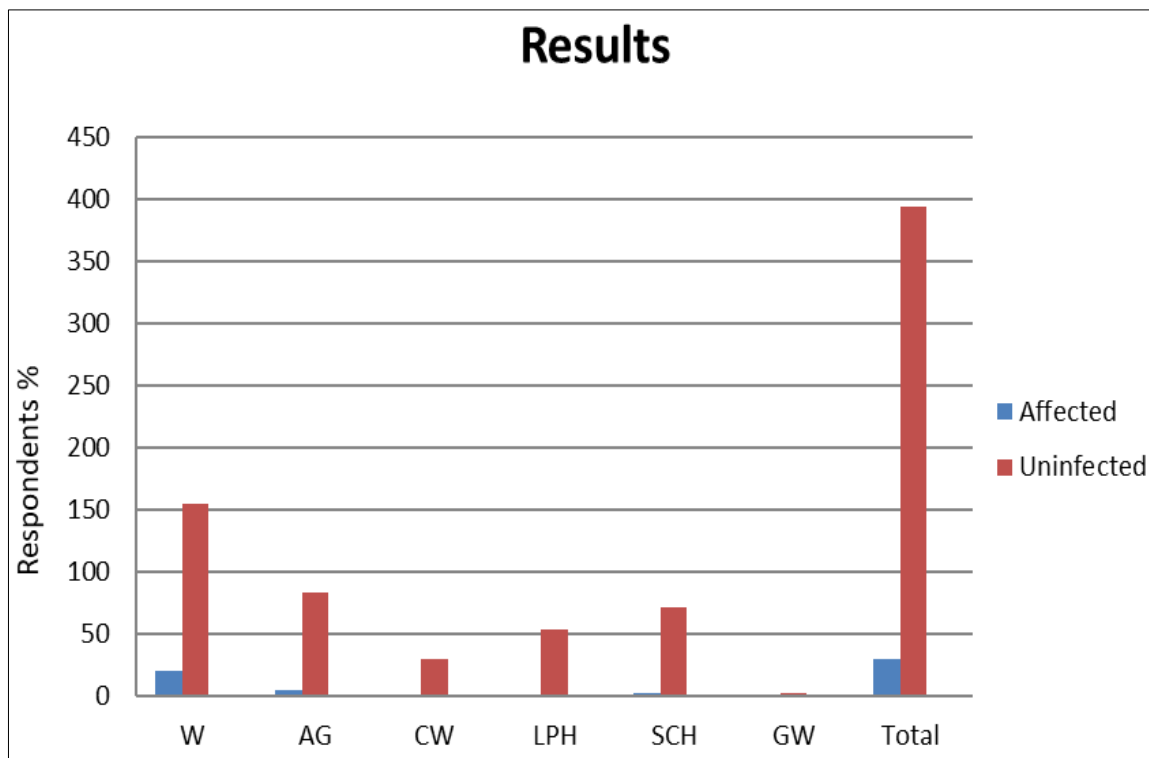
**Ethical considerations**

Permission was obtained from Kebbi State Ministry of Health before the administration of questionnaire. Permission was also sought from the Local Government Authorities and village heads. Informed verbal consent was also sought and obtained from each individual concerned. All information obtained was treated with utmost confidentiality.

**Results**

The results obtained in this research are presented in Fig 1 and tables 1-4.

The views of the respondents (affected and unaffected) on the knowledge of the cause of LF is presented on Fig. 1. It revealed that both affected and unaffected respondents were completely ignorant of the cause of LF. None identified mosquito bite as a cause. Majority, comprising 68.9% affected and 39.3% unaffected thought it was caused by witchcraft. Many thought it was guinea worm infestation (Fig. 1).



**Fig 1:** Perceived Causes of Lymphatic filariasis

**Key**

- W - Witchcraft
- AG - Act of God
- CW - Contaminated Water
- LPH - Lack of Personal Hygiene
- SCH - Stepping on Charm
- GW - Guinea Worm

Respondents view on the mode of transmission of LF also demonstrated complete ignorance. A table of 196 (46.3%) representing 14 (48.3%) affected and 182 (46.2%) unaffected respondents though it was transmitted through sexual intercourse with affected person. A total of 43.5% thought it was witchcraft, 6.6% views were body contact (non-sexual) and 3.5% said it was inheritance (Table 1). Many respondents

linked cause, transmission and prevention of LF to cultural and traditional interpretation to spiritual and supernatural concepts. A total of 204 (48.2%) comprising 44.8% affected and 48.5% unaffected believe that avoiding sexual intercourse with affected person can prevent the disease. A total of 19.4% said good personal hygiene, and none believed avoiding mosquito bite is the preventive measure (Table 2).

On the other hand, respondents demonstrated relatively high awareness of the socio-economic implications of LF. A total of 237 (56.0%) comprising 29 (100%) affected and 208 (52.8%) unaffected believed that the disease decreases the income of sufferers while 12.5% of unaffected respondents believed it rather increase their income as their condition attracts sympathy and people give them financial and material assistance.

Respondents view on proposing marriage to a sufferer revealed that a total of 366 (86.5%) of respondents (both affected and unaffected) would not propose marriage to a sufferer. However, 57 (13.5%) were not sure. If however, they are already married before contacting the disease, 326 (77.1%) would not divorce their spouse. However, 93 (21.9%) were undecided. On association with infected persons, total of 286 (67.6%) said they would associate with affected person while 89 (22.6%) of unaffected respondents would not (table 3).

Table 4 shows result of qualitative interview with only affected persons on psychological, psychosocial and matrimonial aspects of the disease. A total of 14 (48.3%) of sufferers felt sad about their condition, 5 (17.2%) felt shame, 6 (20.7) felt abnormal and 2 (6.9%) felt like committing suicide. On whether the disease makes them think less about themselves, 15 (51.7%) answered yes while 10(34.5%) did not think less of

themselves. However, 4 (13.8%) were not sure. Respondents view on whether their condition affects their acceptance in their community, showed that 21 (72.4%) were well accepted while only 3 (10.3%) were not.

Opinion of sufferers on matrimonial consequences, they had high level of awareness of the disease consequences on family and marriage. Eleven 11 (37.9%) believed that it ruins marriage, 17 (58.6%) said it destroys sexual relationship with partner and only 1 (3.4%) said it leads to divorce. Views on consequences of the disease on prospect of marriage, majority, 19 (65.5%) believed it leads to difficulty in finding marriage partner. Eight 8 (27.6%) said it has no effect and 2 (6.9%). Said it hinders marriage prospect of other family members.

As shown on table 4, the sufferers understood fully the economic consequences of the disease, majority 15 (51.7%) earned monthly income between N10,000 and N20,000 while 2 (6.9%) earned above N20,000. Out of this meager incomes, 18 (62.1%) spent between N5,000 – N10,000 on treatment monthly. On the other hand, 12 (41.4%) agreed that it hinders daily income, 6 (20.7%) thought it low performance at work/school. Five, 5 (17.2%) agreed it caused absenteeism from work/school and 6 (20.7%) thought it led to school dropout.

Sufferers of LF usually try out different sources of treatment in attempt to achieve cure. Respondents views revealed that 13 (44.8%) combine orthodox drugs and local herbs, 11 (37.9%) used only local herbs and 3 (10.3%) used only orthodox drugs. Only 2 (6.9%) used hygienic practices. It is however interesting to know the majority of sufferers, 23 (79.3%) had hope that someday they will be free from the debilitating disease. However, 6 (20.7%) were not sure if they will be cured.

**Table 1:** Respondents knowledge on the mode of transmission and perception on the prevention of LF

Variable	Responses	Infected (n = 29) No. (%)	Uninfected (n = 394) No. (%)	Total (n = 423 No. (%))
Perceived mode of transmission	Body contact (non-sexual)	5 (17.2)	23 (5.8)	28 (6.6)
	Mosquitoes bite	0 (00)	0 (00)	0 (00)
	Sexual intercourse with infected person	14 (48.3)	182 (46.3)	196 (46.3)
	Inheritance	2 (6.9)	13 (3.3)	15 (3.5)
	Witchcraft	8 (29.6)	176 (44.7)	184 (43.5)
	Total	29 (100)	394 (100)	423 (100)
Preventive measure	Avoid body contact with infected person	9 (31.0)	54 (13.7)	63 (14.9)
	Avoid sexual intercourse with infected person	13 (44.8)	191 (48.5)	204 (48.2)
	Avoid mosquito bite	0 (00)	0 (00)	0 (00)
	Avoid guiwa worm infestation	1 (3.4)	05 (1.3)	6 (1.42)
	Good personal hygiene	2 (6.9)	80 (20.3)	82 (19.4)
	Praying to God for protection	1 (3.4)	4 (1.0)	5 (1.2)
	Using charms and local herbs	3 (10.3)	60 (15.2)	63 (14.9)
	Total	29 (100)	394 (100)	423 (100)

**Table 2:** Respondents views on the effect of LF on economic life of infected persons, marriage to infected persons, divorce their spouse if she/he contacts the disease and their opinions on association with infected persons

Variable	Responses	Infected (n = 29) No. (%)	Uninfected (n = 394) No. (%)	Total (n = 423) No. (%)
Effect on economic life	Reduces income of sufferers	29 (100)	208 (52.8)	237 (56.0)
	Increases income of sufferers	0 (00)	53 (13.5)	53 (12.5)
	Has no effect on income	0 (00)	38 (9.6)	38 (8.9)
	Don't know	0 (00)	95 (24.1)	95 (22.5)
	Total	29 (100)	394 (100)	423 (100)
Marriage proposal infected persons	Yes	0 (00)	0 (00)	0 (00)
	No	18 (62.1)	348 (88.3)	336 (86.5)
	Don't know	11 (37.9)	46 (11.7)	57 (13.5)
	Total	29 (100)	394 (100)	423 (100)
Divorce of infected spouse	Yes	0 (00)	4 (1.0)	4 (0.9)
	No	29 (100)	297 (75.4)	326 (77.1)
	Don't know	0 (00)	93 (23.6)	93 (21.9)
	Total	29 (100)	394 (100)	423 (100)
Association with infected persons	Yes	25 (86.2)	261 (66.2)	286 (67.6)
	No	0 (00)	89 (22.6)	89 (21.0)
	Don't know	4 (13.8)	44 (11.2)	48 (11.3)
	Total	29 (100)	394 (100)	423 (100)

**Table 3:** Infected person's feelings on living with LF, thoughts about themselves, acceptance in the family/community, matrimonial consequences (n = 29)

Variables	Responses	Frequency	Percentage
Feelings	Sad	14	48.3
	Shame	5	17.2
	Abnormal	6	20.7
	Suicidal	2	6.9
	Don't know	2	6.9
	Total	29	100
Think less of themselves	Yes	105	51.7
	No	120	34.5
	Don't know	4	13.8
	Total	29	100
Views on being accepted	Well accepted	21	72.4
	Not well accepted	3	10.3
	Not sure	5	17.2
	Total	29	100
Opinion on matrimonial	Ruins marriage	11	37.9
	Destroys sexual relationships with partner	17	58.6
	Leads to divorce by souse	1	3.4
	Total	29	100
Consequences of disease on marriage prospects	Difficult to find spouse Hinder marriage	19	65.5
	Prospect of family members	2	6.9
	Has no effect on marriage prospect	8	27.6
	Total	29	100

**Table 4:** Average monthly incomes of the infected persons, income spent on treatment, effect of the disease on their work, treatment methods used and their hope for complete cure

Variables	Responses	Frequency (n = 29)	Percentage
Mean monthly income	Below N5,000	6	20.7
	N5,000 – N10,000	6	20.7
	N10,000 – N20,000	15	71.7
	Above N20,000	2	6.9
	Total	29	100
Income spent on treatment monthly	Below N500	4	13.8
	N5,000 – N10,000	18	62.1
	N10,000 – N20,000	6	20.7
	Above N20,000	1	3.4

	Total	29	100
Effect	Hinder daily income	12	41.4
	Absenteeism from work/school	5	17.2
	Low performance at work/school	6	20.7
	Dropout	6	20.7
	Total	29	100
Treatment method	Orthodox drugs	3	10.3
	Local herbs only	11	37.9
	Both drugs & herbs	13	44.8
	Hygienic practices	2	6.9
	None	0	0.00
	Total	29	100
Level of hope	There is hope of cure	23	79.3
	No hope of cure	0	0.00
	Not sure	6	20.7
	Total	29	100

**Discussions**

Lymphatic filariasis is considered to be one of the main neglected diseases and is predominantly distributed in areas with poor social conditions and deficient sanitary infrastructure [8].

The present study revealed that although the communities in the study area are endemic for LF, majority of the population are not aware of the cause, transmission and preventive measures of the debilitating disease. This signifies that information and awareness creation on the diseases remains very low in these communities. This is similar to many reports on knowledge attitude and practices in Nigeria and elsewhere [9, 10]. On the contrary some researchers report high awareness and perceptions of the disease [11, 12].

Low awareness of the cause, transmission and prevention of this study may be due to lack of knowledge-based awareness or health education about the diseases in the communities.

In this study the participants did not know that mosquito is the vector of LF. This is similar to the report of [13] in Orissa community, India.

With respect to prevention of LF, our findings revealed that participants also had misconception lack of knowledge by communities could hamper preventive and control measures, for instance they will not sleeping under insecticide impregnated net seriously compliance to MDA.

With respect to prevention of LF, our findings revealed that participants also had misconception about its preventive measure. Majority believe that avoiding sexual intercourse and body contact with infected person could help prevent the disease. This attitude has profound detrimental psychological effect on the life of affected individuals leading to social stigma. This was also reported by [13] among Ado people of Benue state. However in practical terms affected people reported that stigmatization in the community is very low, Social stigmas associated with lymphatic filariasis in upper socio-economics groups seem to be of great significance, whereas in lower socioeconomic group population stratum like this study area, it seemed not. The sufferers in this study felt shame, sad, abnormal and some contemplated suicide. Though they were not isolated, they were angry, bitter, depressed about their condition. This may be due to reduced

productivity, unattractiveness and sexual dysfunction similar negative feelings have been reported in India [14]. The misconception and superstitions upheld by participants in this study militate against prevention, treatment and control.

Thus, the patients seek for remedy from various sources. Majority use both traditional & orthodox drugs and many only traditional medicines. Only very few adhere to hygiene practices recommend by WHO for morbidity control and alleviating physical disability.

**Conclusion**

Most of the participants had a poor knowledge of LF, the mode of transmission and preventive measure. However, awareness on economics implication is relatively high. Stigmatization is low and many had hope of being free someday.

**Recommendation**

We recommend that house to house public campaign is necessary to raise awareness and knowledge of the cause, transmission and prevention of LF in the study area.

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