

# The Knowledge And Perception About Lymphatic Filariasis In One Of The Endemic Talukas Of Rural North Karnataka

Dorle A S, Basavaraj Mannapur, Hiremath L D, C H Ghattargi, Umesh R, Manjula R, Kulkarni K R and Gundappa

## ABSTRACT

**Research Question:** 1) To study the knowledge and perception about lymphatic filariasis (LF) in one of the endemic talukas of rural north Karnataka.

### Objectives:

1. To evaluate the knowledge and perception about lymphatic filariasis in one of the endemic talukas of rural north Karnataka.
2. To find out the source of information of the MDA activity of the respondents.

**Study Design:** A cross sectional study.

**Study Area:** The Bilagi taluka of Bagalkot district which comprises 65 villages.

**Study Period:** The study was conducted for 6 months i.e. from March 2009 to September 2009.

**Study Participants:** People from the villages of the Bilagi taluka.

**Methods:** The data was collected by using pre- tested and pre-designed proforma.

**Results:** Most of the study population (68.99%) was not aware about the mode of spread of lymphatic filariasis (LF). Only 31.01% knew that LF spread by mosquito bites. A majority of the study population (63.67%) said that mosquitos breed in dirty water and only 6.64 % said that mosquitos breed in clean water. 64.86% of the study population had knowledge about the manifestations of lymphatic filariasis, while 35.14% did not have any knowledge about the manifestations of the disease. 70.83% were aware about the treatment for filariasis, while the rest of them (29.17%) were not aware about it. The most common sources of information about the MDA activity were government workers like ANMs (40.24%) and Anganwadi workers (30.19%). Teachers were the source of information for only 23.16% of the population. The role of media as a source of information on MDA activity was minimal (0.27%).

**Key Words:** knowledge, perception, filariasis, endemic area

## INTRODUCTION

Lymphatic filariasis (LF) is a disabling and disfiguring infection which is caused by parasitic worms. It is a major cause of disability, social stigmatization, psychosocial and economic reductions in life opportunities, and a major burden on health and hospital resources, especially on account of the costs for surgical intervention. [1]

The term "Lymphatic Filariasis" covers the infections caused by three closely related nematode worms, *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori*. All these three infections are transmitted to man by the bites of infective mosquitoes. All these three parasites have basically similar life cycles in man-adult worms which live in the lymphatic vessels, whilst their offsprings, the microfilaria, circulate in peripheral blood and are available to infect mosquito vectors when they come to feed. [2]

This disease is a major contributor to poverty, and programmes to eliminate it will reduce suffering and disability, improve the reproductive and sexual health (through reduced male genital morbidity) and will improve child and maternal health and development, through the ancillary benefits arising from their effects on the intestinal parasites. [3]

Filariasis is a global problem. It is a major social and economic scourge in the tropics /subtropics of Africa, Asia, Western Pacific and parts of the Americas, affecting over 120 million people in 80 countries. More than 1.1 billion people live in areas where there is a risk of infection [4]. It is estimated that about 600 million people are living in areas which are endemic for lymphatic filariasis in

SEAR. There are about 60 million infected people in the above mentioned region and about 31 million people have the clinical manifestation of the disease [5]. In this region, all the three types of parasites are present. Lymphatic Filariasis (L.F.) is an important public health problem, next to malaria, in India [6]. This problem is increasing every year due to the gross mismanagement of the environment. India contributes about 41% of the global lymphatic filariasis cases [7].

In Karnataka, eight districts are endemic to lymphatic filariasis. From 2005, the MDA campaign, by using the DEC plus Albendazole combination, targeted a population of 1.60 lakh people. In the Bagalkot district, about 1072 lymphatic filariasis cases are found to be present, based on the microfilaria surveys and the line listing lymphoedema cases. In the Bagalkot district, only four talukas were included, for observing MDA, since 2005 [8].

However, with the newer tools which are available, such as ultrasonography for the direct visualization of the adult worms and the antigen detection for the indirect assessment of their functional activity, with past and recent experiences with DEC as a 'partially macrofilaricidal' drug, and with the clear implications that albendazole can be macrofilaricidal [9]

For the proper implementation of the Mass Drug Administration (MDA) programme, public awareness is needed. With this aim, this study was conducted to know the levels of knowledge and perception about lymphatic filariasis in one of the endemic talukas of rural North Karnataka

## MATERIALS AND METHODS

### 1. Study Design:

**Type of study:** A Cross sectional study

**Study area:** Bilagi taluka of Bagalkot district which comprises 65 villages. The total population is around 1,50,000 people.

**Study period:** This study was conducted for 6 months i.e. from March 09 to Sept. 09, after obtaining the permission of DHO for conducting the evaluation survey.

### 2. Sampling Method:

A two stage sampling method (stratified and clustered sampling) was used for selecting the study population. In the first stage, the villages were stratified on the basis of the distance from the respective PHCs i.e. within 5 kms, 5-10 kms and more than 10 kms and the number of clusters were decided from each strata, as per the number of houses in each strata. In the second stage, from each selected cluster, 10% households were selected for the survey by a systematic random sampling method, which totalled to a 5512 population. Among the 5512 population, 46 people could not be traced even after 3 repeated visits by the health workers. The actual study population was 5466.

### 3. Data Collection

A team of 4 health workers were trained for the data collection, for two days. All the members of the selected family who were present at the time of the visit of the health worker were included in the study.

## RESULTS

Strata	Total Number Of Villages	Number Of Cluster Selected	Population
0-5	6	8	2283
6-10	19	8)	1304
>10	39	14	1925
Total	64	30	5512

[Table/Fig 1]: Distribution of clusters according to strata

Most of the study population (68.99%) was not aware about the mode of spread of lymphatic filariasis. Only 31.01% knew that LF spread by mosquito bites [Table/Fig 1,2].

knowledge	Number of Individuals	Percentage
Yes	1695	31.01%
No	3771	68.99%
Total	5466	100%

[Table/Fig 2]: Knowledge about mode of spread of Lymphatic Filariasis

A majority of the study population (63.67%) said that mosquitos breed in dirty water and only 6.64 % said that mosquitos breed in clean water [Table/Fig 3].

Breeding Place	Number of Individuals	Percentage
Don't know	1623	29.69%
Clean Water	363	6.64%
Dirty Water	3480	63.67%
Total	5466	100%

[Table/Fig 3]: Distribution of clusters according to strata

64.86% of study population had knowledge about the manifestations of lymphatic filariasis, while 35.14% did not have any knowledge about the manifestations of the disease [Table/Fig 4].

[70.83% were aware about the treatment for filariasis, while the rest of them (29.17%) were not aware about it [Table/Fig 5]. The most

knowledge	Number of Individuals	Percentage
Yes	3545	64.86%
No	1921	35.14%
Total	5466	100.0%

[Table/Fig 4]: Knowledge about manifestations of disease

common sources of information about the MDA activity were government workers like ANMs (40.24%) and Anganwadi workers (30.19%). Teachers were the source for only 23.16% of the population. The role of media as a source of MDA activity was minimal (0.27%) [Table/Fig 6].

knowledge	Number of Individuals	Percentage
Yes	3872	70.83
No	1594	29.17%
Total	5466	100.0%

[Table/Fig 5]: Knowledge about preventive treatment

Source of MDA activity	Number of Individuals	Percentage
ANM	2200	40.24
Anaganwadi Workers(AWW)	1650	30.19
Health Worker(HW)	610	11.16%
Announcements	85	1.56%
Newspaper/Handbills	15	0.27%
Teacher	1266	23.16%

[Table/Fig 6]: Knowledge about source of MDA activity

## DISCUSSION

Most of the study population (68.99%) was not aware about the mode of spread of lymphatic filariasis. 31.01% of the population which was surveyed, had knowledge regarding the mode of spread of the disease, which was less as compared to the study of Mukopadhaya et al in AP, in which it was found that 65% of the people were aware about the transmission of LF i.e., by the bite of mosquitoes [10]. Patnaik et al also noted that 66% of the respondents knew that LF was caused by mosquito bites, in the East Godavari district of A.P [11].

The clinical manifestations of LF may vary from one endemic area to another. Generally, the most common clinical form of the disease is hydrocele, while lymphoedema and elephantiasis occurs less commonly. In India and its neighbouring countries, both hydrocele and lymphoedema are common. Other forms of the disease, such as tropical pulmonary eosinophilia and chyluria, occur less frequently. Hydrocele is not seen in areas which are affected by Brugian filariasis [12],[13]. In the present study, 64.86% of the study population had knowledge about the manifestations of the disease, while 35.14% did not have any knowledge about its manifestations. Mukopadhaya et al, in their study in AP, found that 72.93% of the people were aware about the manifestations of LF [10]. Amarillo ML et al, from a study in Philippines, found that the most common manifestation of LF as mentioned by the study population, was the enlargement of body parts such as the scrotum and female genitalia (58.7%), legs and feet (54.1%), breasts (52.9%), and the arms (28.8%) [14].

In the present study, 70.83% of the study population was aware about the preventive treatment of LF, while the rest of the 29.17% was not aware about it. Amarillo ML et al, from their study in Philippines, found that 82.4% of the sampled population believed that LF could be prevented [14].

In this study, it was found that 30.9% of the population knew about the MDA programme, while from a study done which was done by Mukopadhaya et al [10] in A.P, it was found that 53.66% of the people had only heard the name of MDA. Amarillo ML et al [14], from his study in Philippines, found that the majority (89.1%) of the sampled population claimed to have heard of "mass treatment" or "MDA". Weerasooriya MV et al [15], from his study in Sri-Lanka, found that 35.2% of the participants from the Colombo municipality were unaware of the MDA programme. From this study, it was found that the awareness regarding the MDA activity was less.

The most common sources of information about the MDA activity in our study were government workers like ANMs (40.24%) and Anganwadi workers (30.19%). Teachers were the source for only 23.16% of the study population. The role of media as a source of MDA activity was minimal (1.83%). Mukhopadhyay AK et al [10], from their study in A.P, found that most of the population had heard it through health persons (77.85%), followed by the media (20.87%) and rarely through NGOs (1.27%) [11]. In both the studies, the main sources of information were the health personnel.

## REFERENCES

- [1] Manson-Bahr PEC, Bell DR. Soil-transmitted helminths. In: Manson's tropical diseases, 19th edn. London, UK: Bailliere Tindall, 1987: 407-46.
- [2] Anonymous. Lymphatic filariasis. The Lancet, 1985; 325(8438):1135-36
- [3] World Health Organization, Fifth report of the WHO Expert Committees of Filariasis, WHO Technical Series, 1992;821: 45-46.

- [4] WHO. Lymphatic filariasis: Progress of disability prevention activities. Wkly Epidemiol Rec 2004;79:417-24.
- [5] WHO (1999) Health Situation in the South -East Asia Region 1994-1997 Regional office for SEAR New Delhi.
- [6] Bhaskar C, Harinath, Reddy MV. Filariasis in India. J Int Sci Acad. 2000;13:8-12.
- [7] Agrawal VK, Sashindran VK. Lymphatic Filariasis in India : Problems, Challenges and New Initiatives. MJAFI. 2006; 62 : 359-362.
- [8] Joint Director office Malaria & Filaria, Bangalore, Karnataka.
- [9] ICMR Clinical features, pathogenic and management of Lymphatic filariasis ICMR Bulletin 1998 May 28 (5).
- [10] Mukhopadhyay AK, Patnaik SK, Babu PS, Rao KN. Knowledge on lymphatic filariasis and mass drug administration (MDA) programme in filaria endemic districts of Andhra Pradesh, India. J Vector Borne Dis, 2008; 45(March):73-75.
- [11] Patnaik SK et al. Rural community perception and preventive practice towards filariasis in East Godavari district of A.P. J Commun Dis. 1990; 22(4): 285-6.
- [12] Bethony J, Brooker S, Albonico M, et al. Soil-transmitted helminth infection ascariasis, trichuriasis, and hookworm. Lancet. 2006; 367: 1521-32.
- [13] Taylor MJ, Bandi C, Hoerauf A. Wolbachia bacterial endosymbionts of filarial nematodes. Adv Parasitol. 2005; 60:245-84.
- [14] Amarillo ML et al. Factors associated with the acceptance of mass drug administration for the elimination of lymphatic filariasis in Agusan del Sur, Philippines. Parasites & Vectors, 2008; 1(14).
- [15] Weerasooriya MV et al. Social mobilization, drug coverage and compliance and adverse reactions in a Mass Drug Administration (MDA) Programme for the Elimination of Lymphatic Filariasis in Sri Lanka. Filaria Journal. 2007, 6:11.

## AUTHORS:

1. Dr. Dorle A S: Professor
2. Dr. Basavaraj Mannapur: Associate Professor
3. Dr. Hiremath L D: Professor
4. Dr. C H Ghattargi: Prof. & Head
5. Dr. Umesh R: Assistant Professor
6. Dr. Manjula R: Statistician, Dept. of Community Medicine
7. Dr. Kulkarni K R: Nijalingappa Medical College, Bagalkot -587102, Karnataka
8. Dr. Gundappa: District surgeon, Bagalkot.

## NAME, ADDRESS, TELEPHONE, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Ashok S Dorle, Professor, Dept. of Community Medicine, S.Nijalingappa Medical College, Bagalkot -587102, Karnataka, Mobile: 09448408244, Email: ashok.dorle@rediff.

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