



## A STUDY ON THE TRANSMISSION OF LYMPHATIC FILARIASIS WITH REFERENCE TO OCCUPATION IN URBAN AREAS OF NELLORE DISTRICT OF ANDHRA PRADESH

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### ABSTRACT

Lymphatic Filariasis commonly known as elephantiasis is a painful and profoundly disfiguring disease that has a major social and economic impact in Asia, Africa, the Western Pacific and parts of the Americas (Ottesen *et.al.*, 1997). This disease is caused through parasitic worms known as filarial worms. In most of the cases this disease have no symptoms, however, the people develop a syndrome called elephantiasis which is marked with severe swelling in the legs, breasts, arms and genitals. The condition becomes more painful and unable to tolerate the pain and the appearance of the patients also looks ugly. The main aim of this study is to assess the transmission of lymphatic filariasis with reference to occupation. The convenience sampling method was taken for selection of the selected areas with the sample of 255 in the urban areas of Nellore District of Andhra Pradesh. The results revealed that the people with the age group of more than 45 years living at slum areas were more affected with this disease due to lack of knowledge about this disease.

**KEYWORDS :** Transmission, Elephantiasis, Filarial worms, Occupation.

### INTRODUCTION

Lymphatic Filariasis commonly known as elephantiasis is a painful and profoundly disfiguring disease that has a major social and economic impact in Asia, Africa, the Western Pacific and parts of the Americas (Ottesen *et.al.*, 1997). This is an ancient disease and from centuries onwards this disease is known and mostly neglected tropical disease (NTD). Worldwide this disease is considered as one of the most important public health issue. Globally this disease ranked second leading position among the various causes of chronic disability when compared to other diseases. Lymphatic filariasis is a human disease caused by parasitic worms known as filarial worms. Majority of the cases in the disease have no symptoms. Some people, however, develop a syndrome called elephantiasis, which is marked by severe swelling in the arms, legs, breasts, or genitals (Tincy *et al.*, 2017). The history of lymphatic filariasis was mentioned by Susruta in 600 BC. Madhavkara, a pathologist also described about the signs and symptoms of lymphatic filariasis in 700 CE later. Clarke, 1709 described the 'Elephantoid Legs' as Malabar Legs in Cochin.

In 1866, Otto Wucherer discovered the micro-filaria in chyluria and the female adult worm was discovered by Joseph Bancroft in 1876 in the ulcer of lymph node of the arm. Patrick Manson in 1878 found microfilariae in the stomach of blood sucked mosquito and in 1879, he discovered the nocturnal periodicity of microfilaria. Sibthorpe found male adult worms in 1888. The discovery of microfilariae (mf) in the peripheral blood was first made by Timothy Lewis in 1872 in Calcutta (Kolkata). In 1921, the name *Wuchereria bancrofti* was accepted.

The global baseline estimate of people suffered by LF was 25 million men with hydrocele and more than 15 million people with lymphoedema. Eliminating LF can prevent unnecessary suffering and contribute to the reduction of disability and poverty.<sup>6</sup>

According to World Health Organization (2010) nearly 120 million people in 81 endemic countries are affected by Lymphatic Filariasis and nearly 1.34 billion people live in the areas where Filariasis is endemic and are at risk of infection. In 2000, the World Health Organization (WHO) established the Global Programme to Eliminate Lymphatic Filariasis

(GPELF), which has the goal of eliminating lymphatic filariasis as a public health problem by the year 2020.

According to the fact sheet of World Health Organization (2020), in worldwide 893 million people in 49 countries in the year 2018 were remain threatened by Lymphatic Filariasis and require chemotherapy to stop the spread of this parasitic infection. In the year 2000 over 120 million people got infected and about 40 million people were disfigured and incapacitated by this disease.

The infection occurs to humans when filarial parasites are transmitted through mosquitoes. This disease leads to impairment of lymphatic system usually acquired in childhood hidden damages and abnormality in enlargement of body parts which causes severe pain, disability and social stigma. The people were suffering with more painful and swelling occurs which leads to permanent disability disfiguring visible manifestations of this disease lymphoedema or elephantiasis.

The prevention in lymphatic filariasis primary prevention is control of vectors, require a broad strategy involving both secondary and tertiary prevention. Secondary prevention includes simple hygiene measures, such as basic skin care and exercise, to prevent ADL and progression of lymphedema to elephantiasis. For management of hydrocele, surgery may be appropriate. Tertiary prevention includes psychological and socioeconomic support for people with disabling conditions to ensure that they have equal access to rehabilitation services and opportunities for health, education and income [2]. Management includes simple hygiene measures – either alone or in combination with antibiotic treatment – play an important role in preventing episodes of acute disease and in the management of lymphoedema. Daily washing of affected limbs with soap and safe water to prevent secondary infection, combined with simple exercises, elevation of the limb, and treatment of cracks and entry points, provides significant relief from acute episodes and slows progression of the disease. Like in the case for lymphatic filariasis, a basic package of care can alleviate suffering and prevent further progression of disease and disability [3].

Since there is no known vaccine or cure for lymphatic

filaria, the most effective method that exists to control the disease is prevention. A parasite such as *W. bancrofti*, *B. malayi* or *B. timori* can effectively be controlled if either the vector is controlled, or if microfilarial levels in the population are controlled. There are other preventative methods. Controlling the vector with larvacides or insecticide spraying can be effective, depending on the vector population. Insect repellent, screens around houses and bed nets are other protective measures individuals can use to prevent bites from infected mosquito vectors [4].

**Statement of the Problem**

The present study is to assess the transmission of Lymphatic Filariasis with reference to occupation in selected urban areas of Nellore District, Andhra Pradesh.

**Objectives**

- To assess transmission of Lymphatic Filariasis with reference to occupation in selected urban areas of Nellore District of Andhra Pradesh.
- To associate the transmission of Lymphatic Filariasis with selected socio demographical variables.

**Limitations of the Study**

- Respondents may not be fair in filling up of the questionnaire
- The sample size is 255 in the selected urban areas.

**Methodology**

The quantitative approach was adopted to determine the research study. Descriptive research design is used for the present study. The study was conducted in 52 selected urban areas in the Nellore district. The target population for the present study includes different occupation people in different age groups.

**Sample**

The sample of the present study has taken with different occupation of 255 Study respondents.

**Sampling Technique**

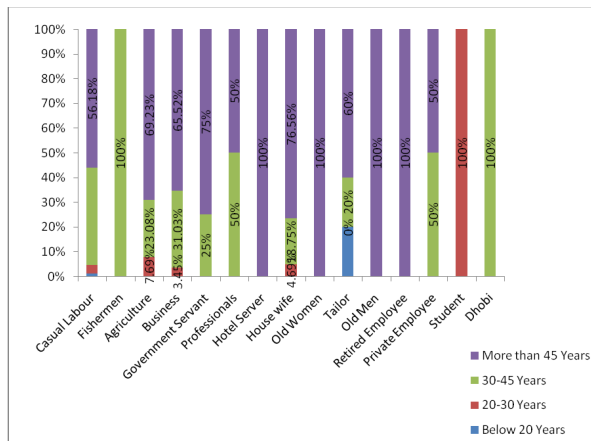
Convenience sampling technique has taken for this study.

**Test Used**

Percentage Analysis and Chi-square test is used to test whether there is any significant difference between age group and occupation.

**Description of the Tool**

A questionnaire was framed to determine the transmission of Lymphatic Filariasis. The demographical variables of Age, gender, religion, educational and social status, occupation, and place of residence and source of information were considered.



**Fig 1: Percentages distribution based on the occupation in different age groups**

**Table 1: Frequency and percentage distribution of different occupations in different age groups**

Chi-square value	P-value	Age				Total	
		Below 20 Years	20-30 Years	30-45 Years	More than 45 Years		
91.816	0.000**	Casual Labour	1	3	35	50	89
			1.12%	3.37%	39.33%	56.18%	34.90%
		Fishermen	0	0	2	0	2
			0%	0%	100%	0%	0.78%
		Agriculture	0	1	3	9	13
			0%	7.69%	23.08%	69.23%	5.10%
		Business	0	1	9	19	29
			0%	3.45%	31.03%	65.52%	11.37%
		Government Servant	0	0	1	3	4
			0%	0%	25%	75%	1.57%
		Professionals	0	0	2	2	4
			0%	0%	50%	50%	1.57%
		Hotel Server	0	0	0	1	1
			0%	0%	0%	100%	0.39%
		House wife	0	3	12	49	64
			0%	4.69%	18.75%	76.56%	25.10%
		Old Women	0	0	0	23	23
			0%	0%	0%	100%	9.02%
		Tailor	1	0	1	3	5
			20%	0%	20%	60%	1.96%
Old Men	0	0	0	12	12		
	0%	0%	0%	100%	4.71%		
Retired Employee	0	0	0	5	5		
	0%	0%	0%	100%	1.96%		
Private Employee	0	0	1	1	2		
	0%	0%	50%	50%	0.78%		
Student	0	1	0	0	1		
	0%	100%	0%	0%	0.39%		
Dhobi	0	0	1	0	1		
	0%	0%	100%	0%	0.39%		
Total		2	9	67	177	255	
		0.78%	3.53%	26.27%	69.42%	100%	

**Table 2: Frequency and percentage distribution with Living area of different age groups**

Chi-square value	P-value	Age				Total	
		Below 20 Years	20-30 Years	30-45 Years	More than 45 Years		
0.477	0.924 <sup>NS</sup>	Slum	0	1	7	15	23
			0%	4.35%	30.43%	65.22%	9.02%
Living Area		Non-Slum	2	8	60	162	232
			0.86%	3.45%	25.86%	69.83%	90.98%
Total		2	9	67	177	255	
		0.78%	3.53%	26.27%	69.42%	100%	

**Table 3: Frequency and percentage distribution with Residential status in different age groups**

Chi-square value	P-value	Age				Total
		Below 20 Years	20-30 Years	30-45 Years	More than 45 Years	
2.066	0.914 <sup>NS</sup>					

Residential Status	Katcha	0	0	1	2	3
		0%	0%	33.33%	66.67%	1.18%
	Semi-Pakka	0	3	12	31	46
		0%	6.52%	26.09%	67.39%	18.04%
	Pakka	2	6	54	144	206
0.97%		2.91%	26.21%	69.90%	80.79%	
Total		2	9	67	177	255
		0.78%	3.53%	26.27%	69.42%	100%

### Findings

- There is highly significant difference in the age groups with reference to occupation with the p-value (0.000) and chi-square value of 91.816 (Table 1). Also, the age group of more than 45 years has high risk in getting this disease who was retired employees, house wives and old people at home.
- 56.18% of casual labor, 69.23% of agriculturists, 75% of government servants, 65.52% of business people, 60% of tailors, 50% of professionals and 50% of private employees were got affected and suffering with this disease (Fig 1).
- There is no significant difference in the living area (Slum and Non-slum) of the people with different age groups (Table 2).
- There is no significant difference in the residential status of the respondents who are living in katcha, semi-pakka and pakka house with reference to different age groups (Table 3).

### CONCLUSION

The study concluded that there is high significant difference with reference to occupation and age groups of the respondents in selected urban areas of Nellore district, Andhra Pradesh. No significant differences are seen with reference to living area and residential status of different age groups.

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