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RESEARCH ARTICLE

AWARENESS OF LYMPHATIC FILARIASIS AMONG THE OUTPATIENT POPULATION VISITING A DENTAL HOSPITAL IN CHENNAI

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ABSTRACT

Aim and objective: To investigate and determine the knowledge and level of awareness of the outpatient population visiting dental hospital in Chennai about lymphatic filariasis.
Method and Materials: This study was done by distributing 121 questionnaires to the outpatient population visiting dental hospital in Chennai who were willing to participate.
Result and discussion: 62% of the study population has heard or knew about LF and 45% had come across people with LF. People who have heard about LF mostly gets information from the school (38%) followed by mass media (31%). Most of the study population aware (60%) about mode of spread of LF is caused by mosquito. Lymphedema (42%) and Elephantiasis (36%) are the most common clinical features knew by the study population. Quite a number of population (77%) knew that LF is non hereditary, (82%) knew that LF is not caused by supernatural causes and (67%) knew that drinking unsafe water can cause LF. (67%) of the study population believed that LF can be diagnosed through blood examination and using mosquito net and repellent can prevent LF. (69%) of the population also believed that LF can be prevented through various measures and (55%) believes that traditional healers cannot help curing LF. About (69%) of the study population have heard about Mass Drug Administration Programme.
Conclusion: Lymphatic filariasis is quite familiar among the outpatient population in Chennai. However, the awareness and knowledge about LF is still lacking in the urban area. Mass Administration Programme also quite unfamiliar among them as it mostly focus on the rural area compared to urban area.

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INTRODUCTION

Lymphatic filariasis (LF) is a parasitic infection which is caused by human parasitic worms. The worms can be classified as nematode worms, such as Wuchereria bancrofti, Brugia malayi and Brugia timori (Dorle *et al.,* 2011). The infection may be transmitted through mosquito bites. This may damage the lymphatic system and can cause chronic and debilitating swelling of the limbs known as lymphedema or it advanced form, elephantiasis (Anjum *et al.,* 2014). Lymphatic filariasis can be considered as a major health problem and socioeconomic burden in many tropical and sub-tropical countries. Lymphatic filariasis is considered as tropical diseases by World Health Organization (WHO) and is known as the second leading cause of permanent long-term disability in the world (Simonsen *et al.,* 2014). Approximately 120 million people have been infected by the endemic disease and approximately 40 million people have become incapacitated due to the disease (Organization, 2010; Brady, 2014).

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In India, it contributes over 40% of the global LF burden which is approximately 600 million people who reside in 250 districts all around India (Martindale *et al.,* 2014). This disease gives results to poverty and its elimination will reduce suffering and disability, improve the health condition of patients, child and maternal health and development (Organization, 2000). Therefore, India has set a national goal to eliminate Lymphatic filariasis by 2020 which is similar to World Health Organisation's global goal. Mass drug administration (MDA) programme and reduction of lymphatic filariasis associated morbidity for patients already impacted by clinical disease are the strategies to eliminate this public health problem (Anjum *et al.,* 2014). However, in cases of chronic clinical manifestation like lymphedema, elephantiasis and hydrocele, lymphedema management programs are preferable compared to MDA to prevent lymphedema from worsening which is known as adenolymphangitis (Mues *et al.,* 2014). This study is carried out to assess the level of awareness which includes the people's knowledge, beliefs and behaviours towards Lymphatic filariasis. It is focused on the outpatient population visiting the dental hospital in Chennai, Tamil Nadu, India.

Table 1. The questions on sociodemographic and knowledge on lymphatic filariasis and its results

Variables	Number (N), Percentage (%)
Age	
15-29 years old	45, 37.2%
30-39 years old	33, 27.3%
40-49 years old	25, 20.7%
50- 59 years old	18, 14.9%
>60 years old	0, 0%
Gender	
Male	63, 52%
Female	58, 48%
Area of living	
City	100, 82.6%
Rural	21, 17.4%
Coastal	0, 0%
Do you know or have you heard about lymphatic filariasis?	
Yes	75, 62%
No	46, 38%
How do you get information about Lymphatic filariasis?	
Mass media	23, 30.6%
School	29, 38.7%
Health center	17, 22.7%
Other	6, 8%
Have you come across with people affected with filariasis?	
Yes	54, 45%
No	67, 55%
People often get filariasis because of witch craft or supernatural causes.	
Yes	22, 18%
No	99, 82%
Method of transmission?	
Bacteria	8, 7%
Mosquito	72, 60%
Worms	4, 3%
Don't know	37, 30%
Filariasis is nonhereditary?	
Yes	93, 77%
No	28, 23%
Drinking unsafe water can lead to filariasis?	
Yes	81, 67%
No	40, 33%
Clinical features of Lymphatic filariasis.	
Lymphedema	50, 42%
Hydrocele	10, 8%
Elephantiasis	44, 36%
All of the above	17, 14%
Filariasis can be diagnosed through blood examination?	
Yes	81, 67%
No	40, 33%
Traditional healers can help curing Lymphatic filariasis?	
Yes	54, 45%
No	67, 55%
By using mosquito net and repellent can help preventing filariasis?	
Yes	81, 67%
No	40, 33%
Filariasis can never be prevented.	
Yes	37, 31%
No	84, 69%
Have you heard about Mass Drug Administration programme?	
Yes	84, 69%
No	37, 31%
Protecting myself from filariasis is my responsibility.	
Yes	121, 100%
No	0, 0%

MATERIALS AND METHODS

This cross-sectional study was conducted in Chennai, Tamil Nadu, India. It is located near the coastal area of Bay of Bengal. The information on the knowledge, attitude and perceptions of the people with the acute or chronic symptoms of Lymphatic filariasis among the outpatient population visiting dental hospital throughout Chennai was investigated. They may come from various places. The data collection was done by preparing a questionnaire and distributing it to the outpatient who is willing to participate in this study.

The questionnaire is divided into two part which focuses on the demographic information of the respondents and the knowledge about Lymphatic filariasis.

RESULTS

A total of 121 outpatient population voluntarily participated in the survey, 52% of the respondents are male and 48% are female. Most patients of age 15-29 years old (37.2%), followed by 30-39 years old (27.3%), 40-49 years old (20.7%) and the least were aged 50-59 years old (14.9%).

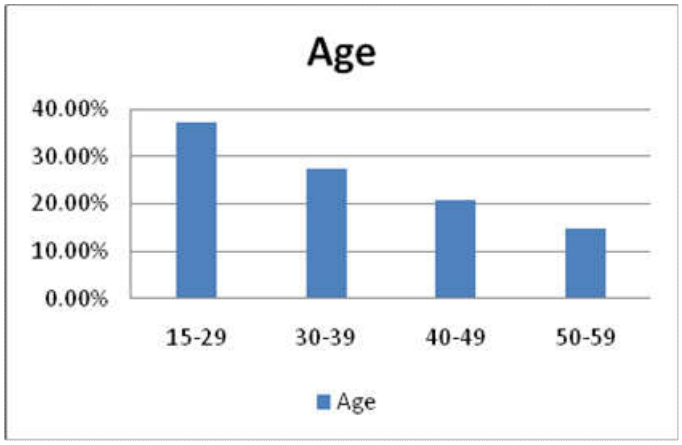

Figure 1. The age of the respondents participated in the survey

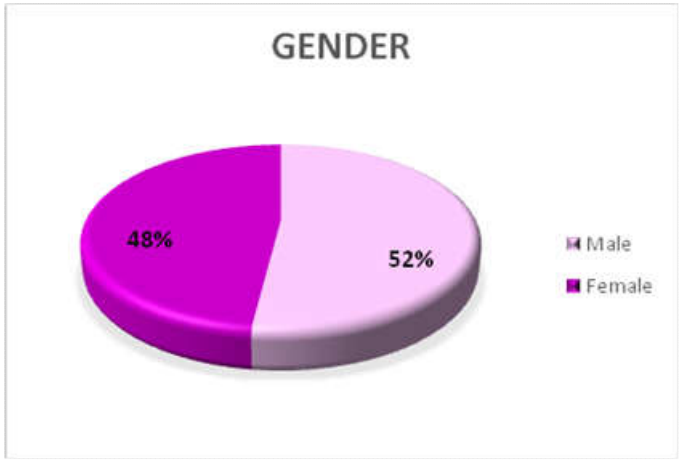

Figure 2. The gender of the respondents participated in the survey

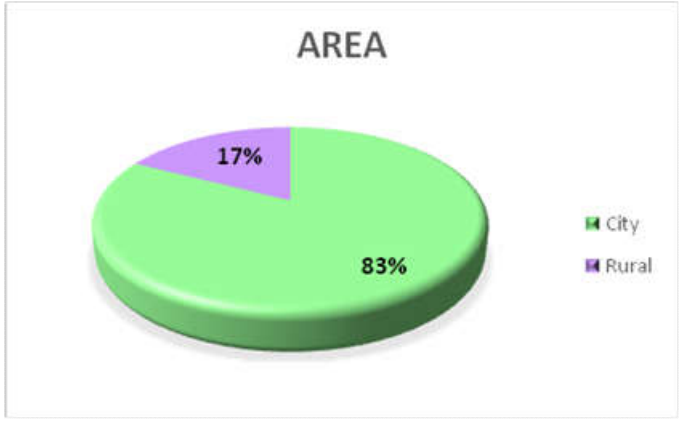

Figure 3. The area which the respondents lived

None of the patients were aged 60 and above. The patients lived mostly in the city (82.6%) and only (17.4%) lived in the rural area. Approximately 62% of the respondents had heard about Lymphatic filariasis. Among them, it was reported that they received the information mostly from the school (38.7%), mass media (30.6%), health centres (22.7%) or other people (8%). The majority of the respondents (60%) knew that Lymphatic filariasis is transmitted by mosquitoes. Quite a number of respondents (30%) did not have any idea how Lymphatic filariasis is transmitted. 7% of the respondents responds that Lymphatic filariasis is caused by the bacteria and 3% is caused by worms. Lymphedema (42%) and elephantiasis (36%) were the most common clinical features known by the respondents. Only 8% know that hydrocele is also one of the clinical features of Lymphatic filariasis. Approximately 14% of the respondents known that lymphedema, elephantiasis and hydrocele are the clinical features of Lymphatic filariasis. Quite a number of population (77%) knew that LF is non-hereditary, (82%) knew that LF is not caused by supernatural causes and (67%) knew that drinking unsafe water can cause LF. (67%) of the study population believed that LF can be diagnosed through blood examination and using mosquito net and repellent can prevent LF. (69%) of the population also believed that LF can be prevented through various measures and (55%) believes that traditional healers cannot help curing LF. About (69%) of the study population have heard about Mass Drug Administration Programme

DISCUSSION

62% of the study population has heard or knew about LF which is higher compared to the study done by Amarnath (60%) (Gupta, 2016) and (55.4%) by Karmakar Ray *et al.,* 2011 which is lesser. As compared to an urban area, the study done by Chacko *et al.,* 2017 only 18% were aware of LF. 45% of the study population had come across people with LF. However, in the study done by Ramaiah *et al.,* 2005 it showed that filariasis is not one of the major public health problems in Chennai which is one of a large urban area in India and thus the prevalence was less. People who have heard about LF mostly gets information from the school (38%) followed by mass media (31%) which is quite similar to the study done by Al-Abd *et al.,* 2014 in Malaysia. However, the information from the schools, mass media, health centers and other people cannot be assumed as sufficient to give an appropriate understanding about LF (Al-Abd *et al.,* 2014). It is important to use an appropriate medium of communication in order to ensure that the messages are delivered correctly. Most of the study population aware (60%) about the mode of spread of LF is caused by a mosquito which is less as compared to study done by Mukhopadhaya et al (65%) (Mukhopadhyay *et al.,* 2014). Lymphedema (42%) and Elephantiasis (36%) are the most common clinical features knew by the study population. The local terms used to describe the swelling of lower limb, elephantiasis and lymphedema is yanaikkal meanwhile the common term used for hydrocele is veraveekam or veravadam, which means the swelling of the scrotum (Ramaiah *et al.,* 1996). The term filariasis is not familiar towards the study population.

Quite a number of population (77%) knew that LF is non-hereditary, (82%) knew that LF is not caused by supernatural causes and (67%) knew that drinking unsafe water can cause LF in comparison to study done by Ryan, (53.4%), (96.8%) and (53.5%) respectively (Oducado, 2014). (67%) of the study population believed that LF can be diagnosed through blood examination and using a mosquito net and repellent can prevent LF compared to study done by Ryan (97.3%) and (98.9%) respectively (Oducado, 2014). In the review done by Gheeta *et al.,* 2014 many research on phytochemical activity showed positive results on the mosquito repellent activity like Citronellal, Azadirachtin, linalool and p-Methane-3,8-diol obtained from citronellal plant, neem, lavender and menthe plant respectively (Gheeta *et al.,* 2014). (69%) of the population also believed that LF can be prevented through various measures which are more compared to study done by Ryan (Oducado, 2014) 53.5%) and (82.4%) by Amarillo *et al.,*

2008 and (55%) believes that traditional healers cannot help curing LF which is less compared to study done by Ryan (97.9%) (Oducado, 2014). About (69%) of the study population have heard about Mass Drug Administration (MDA) Programme which is more compared to study done by Mukopadhaya et al (53.66%) (Mukhopadhyay *et al.,* 2014) and Dorle *et al.,* 2011 (30.9%). In this study, it shows that the study population has heard about MDA but they did not know the action taken by this programme. The combination of single dose DEC and albendazole were recommended by World Health Organization (WHO) to be implemented in the MDA programme which reduced microfilaria blood count (El Setouhy *et al.,* 2004). The study population's awareness of MDA varies widely between different community setting in which whether there is the presence of the disease or not (Al-Abd *et al.,* 2014; Lahariya, 2008). As in the study of Ramaiah *et al.,* 2005 in the urban area of Chennai, the lack of awareness is due to lack of prevalence and socioeconomic impact of the disease as only 2%-8% of cases related to elephantiasis and hydrocele were present. In other studies, it also showed that the compliance and coverage of MDA are much better in the rural area in comparison to the urban area (Chacko *et al.,* 2017; Patel, 2012; Babu and Kar, 2004; Ranganath, 2010; Kumar *et al.,* 2008). The coastal area is also common with lymphatic filariasis. About 0.4% of fisherman community who are working in Ennore Creek, Bay of Bengal in India affected with lymphatic filariasis (Gomathy Parasuraman *et al.* 2015). In order to improve the compliance of the community, various measures can be taken such as intensive information, education, advocacy campaign involving professional bodies such as public health authorities and NGO would give a positive impact on MDA programme (Ramaiah *et al.,* 2005; Sabesan *et al.,* 2010). Distribution of posters and leaflets about LF also give advantages to the community and MDA programme [27]. Sabesan *et al.,* 2010 also believed that the continuous MDA programme would result in the elimination LF which can withdraw LF from the public health problem in India. Although it was quite challenging to implement MDA programme in urban areas, the presence of health medical colleges, private practitioners and non-government organizations would give positive impacts in the development of drug delivery strategies (Ramaiah *et al.,* 2005). Therefore, the efficiency of drug delivery strategies, complete coverage of information on the benefits and direction of using the drugs, the effectiveness of the mass media and the assists from the medical health officer would give advantages in the implementation of MDA programmes in both urban and rural area in India (Jothula *et al.,* 2017).

Conclusion

Lymphatic filariasis is quite familiar among the outpatient population in Chennai. However, the awareness and knowledge about LF are still lacking in the urban area. Mass Administration Programme was also quite unfamiliar withthem as it mostly focuses on the rural area compared to urban area. Various measures should be taken in order to eliminate LF as one of the major public health problems in India by 2020.

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