

Management of Lymphatic Filariasis with Impact on Morbidity Control in Bangladesh

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ABSTRACT

LF is the highest disease burden of any tropical disease except malaria. It takes a tremendous toll on individuals through physical disability and social stigmatization caused by the parasite *Wuchereria bancrofti*, which is the classic causative agent of LF in humans. The LF is the second leading cause of disability worldwide and is primarily a disease of the poorest of the poor. Despite this, there is limited socio-cultural research into the burden of disability associated with LF. In-depth qualitative research exploring disability from the client, family and community perspectives is limited. There is a need to find out the level of disability at various stages of the disease and following different intervention methods. This information is vital for public health planners for cost rehabilitation needs within LF endemic communities. With this context, we conducted a KAP survey to obtain an accurate knowledge of LF and found poverty and lack of knowledge, attitudes, and practices for the LF are the factors responsible for low coverage of MDA and morbidity control in Bangladesh. This information is vital for understanding the target's in-depth information and conducting individual health activities.

Keywords

Lymphatic Filariasis, LF, Lymphoedema, Morbidity control.

Introduction/Background

Lymphatic Filariasis (LF) is one of the Neglected Tropical Diseases (NTDs) which is the second leading cause of disability in the world. The infection is usually acquired in childhood, causing hidden damage to the lymphatic system, resulting in severe morbidity from progressive, irreversible swelling of the limbs and genitals, with burden to the family and society. A large number of affected people exhibit physical and mental disabilities, an impaired ability to work, and a compromised quality of life. These problems arise not only from the disease process but also from social stigma, leading to a cumulative, adverse impact at the individual, household, community, and national levels.

In 1997, World Health Assembly (WHA) urged its member states and made resolution for global elimination of LF as a public health

problem. With the formation of Global Alliance for the Elimination of Lymphatic Filariasis (GAELF) and the partnership of many Ministries of Health, NGOs and philanthropic foundations, effort to eliminate this disease is ongoing. Elimination program involves the interruption of disease transmission through annual Mass Drug Administrations (MDAs) with no or negligible side effects and morbidity control to alleviate the suffering of individuals who show clinical manifestations of the disease [1] J Horton et al., 2000).

The MDA campaign has seen unprecedented scale up since 2000. A cumulative total of 7.1 billion treatments have been delivered to over 890 million people. In 2017, the proportion of total population requiring MDA was 52.4%, with 465.4 million people treated in 37 countries. MDA was not implemented in 9 countries where required. Low MDA coverage will reduce the impact on transmission, require more MDA rounds and additional resources, and delay in reaching elimination targets [2,3].

Although Bangladesh has also suffered from LF for a long time, the situation has been improved dramatically since 2001 till 2010 with MDA coverage in 19 districts covering about 45 million population. LF Program was started as a separate program under Ministry of Health, Government of Bangladesh by the PI while he was program Manager under MOH. He implemented the program for ten years till elimination, a wonderful achievement.

Bangladesh is one of the first countries to start the elimination programme by adopting MDA strategy with the support of the Global Programme to Eliminate LF (GPELF). The MDA had been completed in whole Bangladesh; Bangladesh entered the post-drug administration surveillance. Bangladesh Government aims to declare and be recognized as an LF disease-free country by 2021. With this context, we conducted a KAP survey in 2011 to obtain an accurate knowledge of LF, the attitudes and the practices for health behavior of LF from service receivers. This information is vital for understanding the target's in-depth information and conducting individual health activities also the knowledge about morbidity control.

Objective of Study

General Objective

To find out the factors responsible for low coverage of MDA in urban areas, Bangladesh.

Specific objectives

- 1) To assess the awareness on treatment and control of filariasis in urban areas and practices among the community by the health service providers in urban endemic intervention areas.
- 2) To study the concept of MDA for filariasis among the patients of urban areas and their socio- demographic status.
- 3) To assess the knowledge, attitude and practice about prevention of filariasis by MDA and morbidity control among formal health care providers in endemic areas.

Methodology

This is a retrospective descriptive study. We conducted a KAP survey on LF and also gathered their basic information in 2011. The number of subjects was 564. Study areas were in the Urban area of 12 districts in Bangladesh. All data were recorded and analyzed using version 16.0 of the SPSS software package and MS office tools. The collected data were verified, checked, and edited for consisting and reduction of error.

Results

Table 1 describes six important points.

At first, affected part of the body of which the highest (31.2%) was right leg, followed by the left leg and right scrotum. This figure also describes the association of LF with the present illness. Here it is seen that only 0.5% of the patients suffered from the breast case.

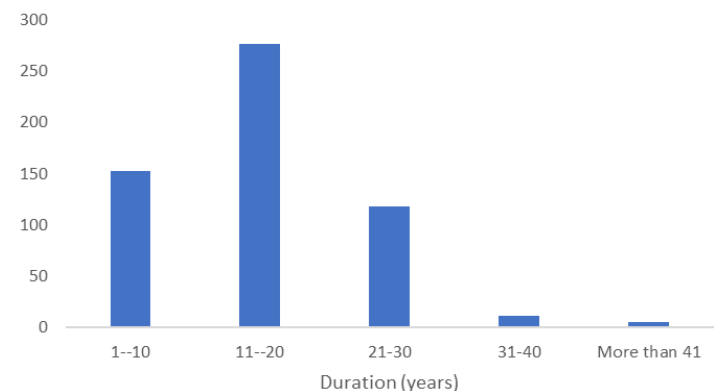
Second, the presence of any problems in receiving treatment. Here only 52.0% of patients had no sufficient knowledge to take

appropriate treatment of LF, and 31.0% had financial problems. A very few (0.7%) of them had no time to take treatment of LF due to their daily wage loss. Third, approximately 65% of the patients said that LF is a preventive disease. Forth, 24.6% of the patients said that LF is affected by mosquito biting, 6.2% said it is from other LF patients, and approximately 60 % of the patients had no idea regarding the sources of LF. Fifth, LF patients were asked to keep protected from mosquito biting of their daily life. 23% of the LF patients said to keep protecting them from mosquito biting using a mosquito net, and most nearly half of the patients had no idea about that.

	N	%		N	%
Total	564	100	Source of LF		
affected part of body			By mosquito biting	139	24.6
Left hand	3	0.5	Dirtiness	21	3.7
Right leg	176	31.2	By other LF patients	35	6.2
Left leg	151	26.8	Housefly	43	7.6
Brest	3	0.5	No idea	326	57.8
Left Scrotum	86	15.2	Protecting way from mosquito biting		
Right Scrotum	131	23.2	Mosquito net	130	23.0
Both leg	10	1.8	Cleaniness	54	9.6
Both Scrotum	4	0.7	Taking medicine	95	16.8
Problems about receiving treatment			Other	10	1.8
Not enough time	3	0.5	No idea	275	48.8
Insufficient knowledge	293	52.0	Reason for not taking medicine		
Not care properly	92	16.3	Absent	29	5.1
Financial problem	175	31.0	Negligence	72	12.8
Q: Is LF a preventive disease?			Not applicable	7	1.2
Yes	368	65.2	No one came	148	26.2
No	196	34.8	Other	256	45.4

Table 1: Marginal distributions of variables.

Lastly, approximately a quarter of the patients said that service providers do not come to give the treatment and any advice at all, and 12% of the patients said they have no interest to cure of this disease. Only a few of the patients were supported by members of the community who are not relatives but helped the patients and support from neighbors was rare. The public-health nurses who visited the communities were not trained in the care of LF and even if they had been trained, they did not have time to give



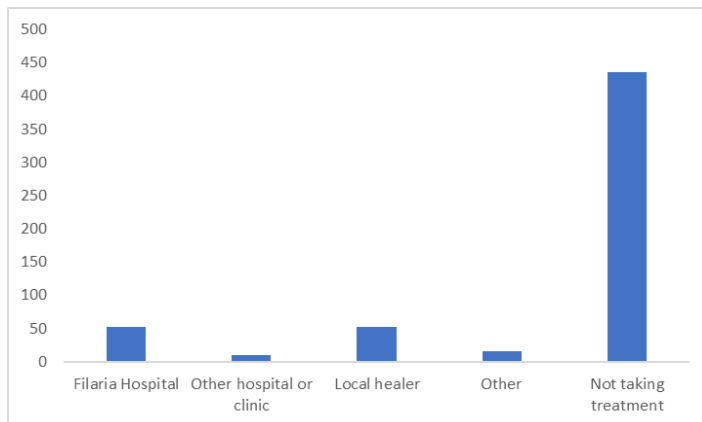
lymphoedema care.

Figure 1: Distribution of age and period for suffering LF patients.

Figure 1 describes age distribution of the sufferer. 49.1% of the patients were suffering from LF for 11-20 years, which were in the age group of 46-60 years old, followed by 27.1% and 20.9% in the

age groups 16-30 years old and 31-45 years old respectively.

Figure 2 describes that most of the patients took LF treatment from the filarial hospital and local healer among the patients who take the treatment. However, there is more than three quarters of the



patients did not take any treatment.

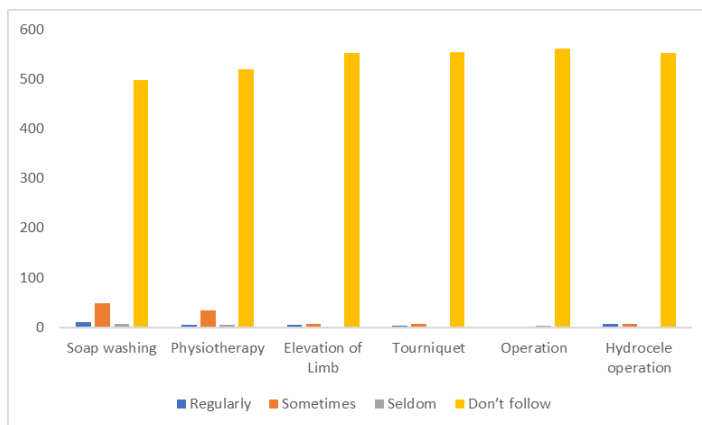
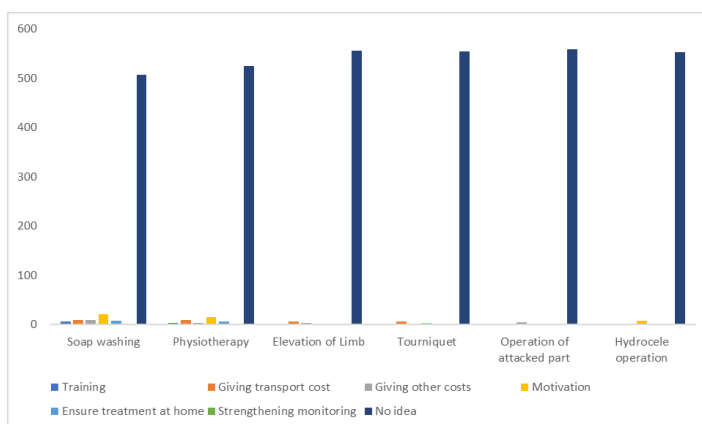


Figure 2: From where are you taking treatment?

Figure 3: Measures of the advice for treatment practices.

Figure 3 describes that most of the patients did not follow the



advice for the treatment practices.

Figure 4: What support required to follow the practices.

Figure 4 describes almost all patients had no idea what support is needed for the practice of LF.

Discussion

LF is the highest disease burden of any tropical disease except malaria. It takes a tremendous toll on individuals through physical disability and social stigmatization caused by the parasite *Wuchereria bancrofti*, which is the classic causative agent of LF in humans. The LF is the second leading cause of disability worldwide and is primarily a disease of the poorest of the poor. Despite this, there is limited socio-cultural research into the burden of disability associated with LF. In-depth qualitative research exploring disability from the client, family and community perspectives is limited. There is a need to find out the level of disability at various stages of the disease and following different intervention methods. This information is vital for public health planners for cost rehabilitation needs within LF endemic communities [4].

In this study, we found the highest affected part of the body (31.2%) by LF was right leg, followed by the left leg and right scrotum. Plus, 49.1% of the whole patients were suffering from LF for 11-20 years, which was in the age group of 46-60 years old, followed by 27.1% and 20.9% in the age groups 16-30 years old and 31-45 years old respectively.

Similar results were found from other studies in Bangladesh [5-8]. These findings have important since most of the patients were in the middle to late middle age and had been affected mainly by LF on the leg(s), which trigger disability. In other words, they are considered being responsible for much of the income of the household, of which the burden on the household due to the disability of the patient is heavy.

Most countries and regions with reported NTDs including LF are in low-income or low- to middle income countries. These diseases are limited to tropical and subtropical regions with inadequate drinking water, poor sanitation and poor residential conditions.

Populations living under the poverty, without adequate sanitation and in close contact with infectious vectors and domestic animals and livestock are those worst affected.

The poor living in remote areas, rural areas, urban slums and are most at risk (WHO, n.d.). Owing to the disease caused by the poverty, they cannot work further, which reduces their income. Thus, the poverty and LF cause an adverse chain reaction. As a matter of fact, we found approximately 30% of the patients had a financial problem for receiving treatment. They cannot work sufficiently because of the disability, such as foot swelling. Besides, we found that more patients were facing insufficient knowledge as a problem than the financial problem when it receives treatment.

Approximately one-third of the patients did not know LF is a preventable disease, approximately 60% of the patients had no idea regarding the sources of LF which is the disease attacks from respondents, and nearly half of the patients had no idea how to prevent mosquito biting. Therefore, we should consider providing sufficient knowledge regarding LF as well as financial assistance

to patients.

Furthermore, this background of the patient who has a lack of knowledge leads to the behavior of the patient that is not sufficient for attitude and practice for LF. For example, approximately 12% of the patients had no / less interest to cure of the LF, most patients did not take any treatment for the diseases, such as soap washing, elevation of the limb. Moreover, almost all patients have no idea about what support required to follow practices for LF.

Filariasis Elimination Programme depends on MDA and sustainable morbidity control, but at the same time, importance is to be given on mosquito control. In the case of the elimination programme has already been started, direct vector control measures may not be possible. The efforts may be taken to educate people about this, and integrated vector management is to be undertaken. The reduction of man vector contact is also necessary using Insecticide Treated Net (ITN). As most of the sufferers are poor and don't have knowledge, attitudes and practices for LF in neglected society, ITN may be distributed free of cost from Government and NGO level, and also ITN should be made available in local markets at a subsidized rate. Since the lack of the attitudes and practices of patients for LF is based on the lack of knowledge for LF, we have to provide sufficient knowledge and financial support. However, the practice may not change if just providing knowledge or attitudes. Acquisition and understanding of knowledge are not always principal for practices change, as there are many things that people know but do not practice.

Hence, we must make sure that the contextual of the reason people do not take good health behavior. As one option for the case, it is necessary to motivate people by using a health behavior theory, such as a health belief model. As the MDA has already finished and waiting for LF free in Bangladesh, morbidity control can be used to help with the above results and discussions. For countries where MDA is still taking place, the above results and discussions could be taken into account as well. LF is one of the neglected tropical diseases, indicating that the patient is poor.

Furthermore, in order to avoid worsening poverty due to the disease, changes in knowledge, attitudes, and practices are required. In this study, we could not determine whether the knowledge the attitude lead to the practices. It is necessary to clarify the causal relationship in future research.

Conclusion

Poverty and lack of knowledge, attitudes, and practices for the LF are the factors responsible for low coverage of MDA and morbidity control in Bangladesh.

Limitation

The study is based on primary information (interviews, observations, questionnaire surveys, and informal talking) due to the lack of secondary information. Only field studies have been conducted in this field. There are a few works regarding the influences of management of LF and impact on morbidity control in Bangladesh. It could be beneficial if there would have enough supportive documents on this issue.

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