Original Article

Sociodemographic Characteristics of Leprosy Patients in Northern Area of Bangladesh

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Abstract:

Background:
Leprosy is a nonfatal, chronic infectious disease caused by Mycobacterium leprae, the clinical manifestations of which are largely confined to the skin, peripheral nervous system, upper respiratory tract, eyes, and testes. As per the 2016 statistics, just over 3000 new leprosy cases were detected countrywide. Among them, male and paucibacillary (PB) cases were predominant.Today, with early diagnosis and the institution of appropriate and effective antimicrobial therapy, patients can lead productive lives in the community, and deformities and other visible manifestations can largely be prevented. The objective of the study was to see socio-demographic characteristics of the leprosy patients in northern area of Bangladesh.

Methods:
This is a cross-sectional study was done on leprosy patients admitted in a hospital (Danish Bangladesh Leprosy Mission Hospital) situated at Nilphamary district in northern zone of Bangladesh during the period of February to July 2018.

Results:
A total of 75 patients was studied and found that the mean age of the respondents was 50 years,and male was predominant (76%). The majority of the study population was muslim (87%). Most of the patients were illiterate (44%) and farmers (33%). The majority of respondents had low socioeconomic status in respect to low monthly income (58%), housing status (55% lived in semi-pacca and 40% in kacca house), and large family size (among the respondents 47% had >5 family members and 43% 3-5 members). Most of the patients (85%) had no family history of leprosy. Among the studied patients 47% were suffering from paucibacillary and 53% from the multibacillary disease category.

Conclusion:
leprosy is predominant in male patients with low socioeconomic status.

Key word: Leprosy, Sociodemographic characteristic.

Introduction:

Leprosy (Hansen's disease) is a chronic granulomatous disease affecting skin and nerves, and is caused by Mycobacterium leprae, a slow growing mycobacterium. Some 4 million people have leprosy and around 750,000 new cases are detected annually. About 70% of world leprosy patients live in India, with the disease endemic in Brazil, Indonesia, Mozambique, Madagascar, Tanzania and Nepal[1].

In 1991, WHO member states resolved to decrease the level of leprosy in the world by over 90%. This has now been accomplished, and the overall target for global elimination of leprosy as a

public health complaint has been attained[2]. The fall in prevalence rate is largely explained by improvement in the management of cases, very low rates of relapse, high cure rate, absence of drug resistance and shorter duration of treatment with MDT[3].

In Bangladesh, leprosy elimination was declared in 1998, 2 years earlier than targeted as if we are now in the post elimination era. The elimination is defined by WHO as reducing registered prevalence to less than 1 case per 10,000. Since then, Leprosy as a public health problem was not considered by the government although the prevalence rate was higher 1/10,000 in sub district level. As per the 2016 statistics, just over 3000 new leprosy cases were detected countrywide. Among them, male were 1865. female 1136 & children 166, and paucibacillary (PB) 1685, and multibacillary(MB) 1315[4].

The Leprosy Mission International Bangladesh (TLMI-B) started supporting leprosy work in the country in 1926 in Chittagong Hill Tracts and Chandraghona. TLMI-B is a prime member of the National Leprosy Elimination Program (NLEP) of the Ministry of Health and Family Welfare of the government of Bangladesh. Since 1994, TLMI-B has supported the national leprosy program; currently TLMI-B is implementing 22 projects under 6 programs across 29 districts in 6 divisions of Bangladesh, with a total of 350 staff. The programs provide leprosy control services, prevention and disability management, specialized care at the DBLM hospital, community based rehabilitation activities, advocacy and research on leprosy with the goal to defeat leprosy and transform lives of communities affected by leprosy[4].

Leprosy is not a particular disease of children as was once believed[5]. In endemic areas, the disease is acquired commonly in childhood. The youngest case seen in South India was an infant 2 month old[6]. Incident rates generally rise to a peak between 10 and 20 years of age, and then fall[7].

Both the incidence and prevalence rate of leprosy appear to be higher in males than in females in most regions of the world. Sex difference is found least in children below 15 years, and more marked among adults; more marked among leprometous cases than among non-leprometos cases. The excess of cases in males has sometimes been attributed to their greater mobility and increased opportunities for contact in many populations[8].

The sex ratio of leprosy presenting during childhood is 1:1, but males predominate by a 2:1 ratio among adult patients. The incubation period is frequently 3-5 years but has been reported to range from 6 months to several decades[9].

It is a well established fact that only a few persons exposed to infection develop the disease. A large proportion in early lesions that occur in leprosy heal spontaneously. Such abortive and self healing lesions suggest immunity acquired through such lesions. Subclinical infections are far more common than was thought earlier; they are also believed to contribute to active immunity. A certain degree of immunity is also probable through infection with other related mycobacteria[10].

It is now recognized that cell mediated immunity (CMI) is responsible for resistance to infection with M. leprae. In lepromatous leprosy, there is a complete breakdown of CMI; in this case lepromin test in negative. Antibodies have been demonstrated throughout the spectrum of leprosy; they are more pronounced at the leprameta end[11].

There is now evidence that human lymphocyte antigen (HLA) linked genes influence the type of immune response that develops[7].

The mode of transmission of leprosy has not been established with certainty. The following theories are frequently debated: droplet infections, contact transmission, others (insect vector, tattooing needles)[12]. Leprosy is often called a 'social disease'. There are numerous causes of social factors which favour the spread of leprosy in the community, such as poverty and poverty related circumstances (e.g., overcrowding, poor housing, lack of education, lack of personal hygiene), and above all, fear, guilt, and unfounded prejudices regarding the disease[13].

The social stigma of leprosy is due to deformities it can cause.over the centuries, a 'legend' has grown round leprosy that it is highly contagious and that it is incurable. Even today, in spite of scientific information available about leprosy, this legend is deeply rooted in the minds of most people at all levels of society with the result that social ostracism is apparent everywhere. This has led patients to hide their early lesions and thereby delay treatment just at the period when they could be most speedily cured. The deep rooted psychological factors cannot be vanished overnight, these important psychological factors are overlooked,

and emphasis is laid only on early detection and treatment. failure to appreciate the importance of social and psychological factors has resulted in the failure of otherwise well conceived programmes[13].

Methodology:

This was a cross-sectional type of descriptive study, carried out in Danish Bangladesh Leprosy Mission Hospital (DBLMH), Nilphamary, Bangladesh. The study populations were Leprosy patients admitted into the DBLMH at the pereod of february to july 2018. A total of 75 leprosy patients of both sexes were included in this study. The sampling was done purposefully and the sociodemographic data were collected directly face to face from all the respondents who give informed consent to include in the study in a preformed structured questionnaire. Then data were edited and analyzed by SPSS version 16. A written permission was taken from the authority of the institute for ethical issues.

Results:

A total of 75 patients were studied. The mean age of the study population was 50 years. Among the respondents 57(76%) were male and 18(24%) were female and male-female ratio was 3:1. Among the study populations 44(59%) were illiterate, 24(33%) got primary education, 5(06%) got secondary education, higher secondary education and graduation were 1(1.3%) each. Among the respondents 65(87%) were Muslim, 9(12%) were Hindu and 1(1%) were Christians. Among the study population 30(40%) lived in Kacha house, 41(55%) in Semi-pacca and 4(05%) in pacca house. Among the respondents 18(24%) were housewives, 33(44%) were farmers, 7(09%) were service holders and 17(23%) businessmen. Among the respondents 43(58%) were in low income status, 22(29%) in middle income, and 10(13%) in high income status. Among the study population 8(10%) had less than 3 family members, 32(43%) had 3-5 members and 35(47%) had more than 5 family members.

Among the study population 11(15%) had a positive family history of leprosy and 64(85%) had none.

Among the study patients 35 (47%) were suffering from paucibacillary and 40 (53%) from multibacillary disease, and the mean duration of illness was 16 years.

Table-I: Sociodemographic characteristics of Leprosy patients (n=75)

	Frequency	Percent
Sex		
Male	57	76%
Female	18	24%
Education		
Illiterate	44	59%
Primary	24	33%
Secondary	5	06%
Higher secondary	1	1%
Graduate	1	1%
Religion		
Muslim	65	87%
Hindu	9	12%
Christian	1	01
Residence		
Kacca house	30	40%
Semi-pacca	41	55%
Pacca house	04	05%
Occupation		
House workers	18	24%
Farmers	32	44%
Service holder	7	09%
Business	17	17%
Monthly income status		
Low income	43	58%
Middle income	22	29%
High income	10	13%
Family members		
<3 members	8	10%
3-5 members	32	43%
>5 members	35	47%

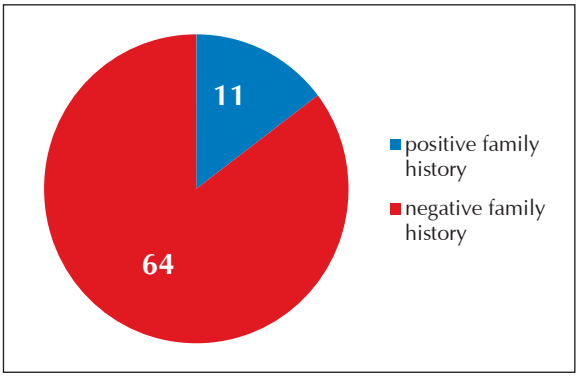


Figure 1: Distribution of family history of leprosy

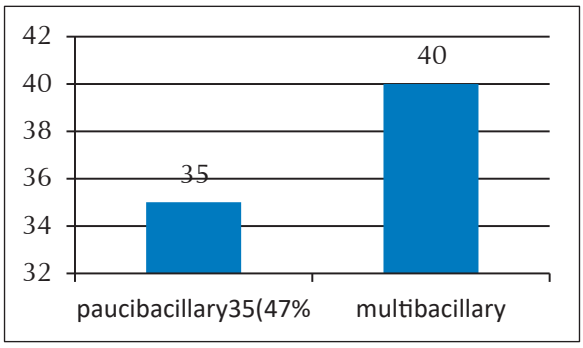


Figure 2: Distribution of category of the disease

Discussion:

In our study, among the 75 leprosy patients the mean age was 50 years. This finding is consistent with the study done by Nils Kaehler et al. who found the age group 61 years or above among 257 leprosy patients in a community in Thailand[14]. We found in our study male predominance with male and female ratio 3:1. This finding is consistent with other findings like Fauci et al. who found males predominate by a 2:1 ratio among adult patients[9]. In this study leprosy was found to be common in low socio-economic status in respect of living, among the 75 participants 33% were farmers, and 95% of the respondents lives in Kacca and semi pacca house), the literacy rate was 41% (59% were illiterate). The overcrowding or large family size was common among the respondents (67% had family members 3 and above), andMost of the population of our study had a low monthly income (59% had monthly income less than 5000/tk per month). This result is consistent with comments by K. Park et.al in India, who found that there are numerous causes of social factors which favour the spread of leprosy in the community, such as poverty and poverty related circumstances (e.g., overcrowding, poor housing, lack of education, lack of personal hygiene)[13]. In our study it was found that multibacillary WHO category patients were higher which was 53% of the study patients. This finding has similarity with the study done by Ronald Jefferson et al. in Brazil, where he found multibacillary form were associated with higher prevalence rate[15].

Conclusion:

Leprosy is common in low socioeconomic conditions with male preponderance. The positive family history does not play a significant role in transmission. Even with the improvement of treatment facilities in Bangladesh, the multibacillary category of leprosy patients are not less than the paucibacillary group.

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