The Burden Leprosy Diseases in India: A Study with Special Reference to Tamilnadu and their Districts

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Abstract: ***Background****: Leprosy is one of the oldest diseases known to mankind. Despite the advancements made by science and technology, this curable disease remains misunderstood and dreaded. India is home to the largest number of new leprosy cases globally. Tamilnadu is one among state of high level of leprosy cases in India. The country was still seen to have largest number of leprosy patients in 2018 especially female and children. Keeping this view, "The Burden Leprosy Diseases in India: A study with special reference to Tamilnadu and their Districts" was undertaken.* ***Data and Method:*** *The paper uses the secondary data from Report of the National Leprosy Eradication Programme, Ministry of Health and Family Welfare and other research studies and carries out the bi-variate analysis to realise its objectives.* ***Findings and Suggestion:*** *The Tamilnadu contribution of growth of leprosy diseases was continuously decreased because our government will take more steps to reduce the number of leprosy cases. Then only it is possible to reach less than one like Kerala and Punjab. Chennai (9.07%), Erode (9.93%) and Villupuram (9.48%) are the large number new leprosy cases deducted district in Tamilnadu. The budget allocation of Tamilnadu share was very low than the other states in India for the purpose of treatment of leprosy diseases. Government will educate the female and children to prevent from the communicable diseases like leprosy.*

Keywords: *Leprosy, Communicable Diseases, Prevalence Rate, Tamilnadu*

I. INTRODUCTION

Leprosy is one of the oldest diseases known to man. East Africa is the more likely place of origin of leprosy. Leprosy also known as Hansen's disease (HD), is a chronic infection caused by the bacteria Mycobacterium leprae and Mycobacterium lepromatosis. Leprosy is not highly infectious. It is transmitted via droplets, from the nose and mouth, during close and frequent contacts with untreated cases. Untreated, leprosy can cause progressive and permanent damage to the skin, nerves, limbs and eyes. In 1982 multi drug therapy (MDT) consisting of Rifampicin, Clofazimine and Dapsone were identified as cure for leprosy on recommendation of WHO came into use[1].

Signs and Symptoms

The mode of transmission of leprosy is still unknown. It is widely believed that the most common mode of entry of leprosy bacilli into the body of the contact person is the inhalation of bacilli laden droplets of nasal secretions of the affected patient[2]. The peak age of onset is between 10 - 20 years. The entry of leprosy in human body ranges from 3 months to 20 years and more, the average being 2-3 years[1]. A person affected by leprosy, management of disability can be assisted or aggravated by that person's own attitude and surrounding environment. It is essential for the patient to be part of the process of management of disability[3&4]. Leprosy usually starts with a non-itching and non-painful patch or patches in the skin. These patches may appear on the visible or non-visible parts of the body. Untreated leprosy can lead to Claw hands, Ulcers and wounds in feet and hands due to anaesthetic condition. Absorption of fingers and toes, Eyelids do not close and eyeballs are damaged resulting in blindness and wrist and ankle drop due to nerve damage.

Setting the Problem

India shares about one fourth of the global estimated leprosy case load and over 60 per cent of the registered cases[5]. There has been a steady increase in the number of cases through successive decades starting with 1.5 million in 1941 and reaching 79,426 cases in 2018. About 50 per cent of the patients are female and children[2]. Tamilnadu is one among state of high level of leprosy cases in India. Keeping this view, *"The Burden Leprosy Diseases in India: A study with special reference to Tamilnadu and their Districts"* was undertaken with the following aims.

Objectives

The following are the objectives of this paper: (1) To understand the Incidence and percentage share leprosy diseases in states and union territories of India; (2) To study the percentage share and prevalence rate of leprosy cases in Tamilnadu; (3) To assess the burden of new detected leprosy cases of female and children in

Tamilnadu and (4) to suggest some control and prevention methods to overcome the leprosy diseases in Tamilnadu.

II. DATA AND METHOD

The paper uses the secondary data from report of the National Leprosy Eradication Programme, Central Leprosy Division Directorate General of Health Services[6], Ministry of Health and Family Welfare, Government of India[7] and other research studies and carries out the bi-variate analysis to realise its objectives.

III. RESULTS AND DISCUSSION

The percentage share of leprosy diseases in Tamilnadu during the period of 2011 to 2108 is presented in the *table–1*. The Tamilnadu contribution of growth of leprosy diseases was continuously decreased over the years except in the period of 2016 (3.7) and 2017 (3.6) in India. The Tamilnadu government will take more steps to reduce the number of leprosy cases because the percentage share of Tamilnadu was slightly increased. So Health education programmes should be better implemented to prevent the physical disabilities, to reduce the traditional cultural beliefs and values associated with leprosy[8]. Then only it is possible to reach less than one per cent of leprosy cases deducted like Kerala and Punjab. But in the number of leprosy cases wise concern, India's position was continuously increased and Tamilnadu position (vice versa) is continuously decreased. In overall the table results reflects the India will have to take some more effort to reduce the leprosy problem especially to concentrate major populous states, then only possible to decline trend of leprosy cases in India.

The prevalence rate of leprosy cases in Tamilnadu is explained in the *Table-2.* The prevalence rate is calculated from the number of leprosy cases affected by their total population multiplied by one lakh. It is nothing but how much leprosy cases deducted per one lakh population in Tamilnadu. On an average four persons was affected by leprosy diseases per one lakh population in every year in Tamilnadu. The prevalence rate was less than 4.0 in 2013, 2015 and 2018. The prevalence rate was more than 4.0 in 2011, 2012, 2016 and 2017. The prevalence rate of leprosy disease in present situation is very low than the previous mentioned years in Tamilnadu. It clearly reflects the National Leprosy Eradication Programme was taken massive steps for the main reason was reduce the leprosy in Tamilnadu.

Percentage share of female and children affected by the leprosy diseases in Tamilnadu are presented in the *Table-3*. In recent years, female and Children are the most vulnerable group of population affected by the leprosy diseases in Tamilnadu. The table clearly explain the percentage share of female was continuously increasing for affected by the leprosy diseases in Tamilnadu after 2011. The current status of female leprosy cases in Tamilnadu was 2113 (65.9%). By their children wise concern, nearly and more than one fourth of the percentage of children affected by the leprosy diseases from the following years 2011 (22.7%), 2016 (24.8%) and 2017 (27.2%) by the total affected cases in Tamilnadu. In overall the table clearly reveals the percentage share of majority leprosy cases were female and children only in Tamilnadu. So our government will concentrate more on children and female and divert the more amount of public health expenditure to the female and children leprosy cases. This is the way to reduce the number and percentage share female and children leprosy cases in Tamilnadu.

Table-4 explains the District wise percentage share of leprosy cases in Tamilnadu during the period from 2015 to 2017. Chennai (9.07%), Erode (9.93%) and Villupuram (9.48%) are the large number new leprosy cases deducted district in Tamilnadu for following period of 2015, 2016 and 2017. Perambalur (0.86%) and Nilgiris districts (0.14%) had less than one per cent share of leprosy cases deducted in Tamilnadu in the year of 2015 in and Ariyalur (0.95%) and Nilgirs Districts (0.18%) had less than one per cent share of leprosy cases deducted in 2017. But in the year of 2016, four districts had less than one per cent share of leprosy cases deducted, they are Ariayalur (0.91%), Karur (0.75%), Perambalur (0.91%) and Nilgirs (0.37%). In overall, Villupuram district is the only district the percentage share of leprosy cases are high in all the mentioned years.

The percentage share of allocation released and expenditure during the financial year 2014-15 to 2016-17 in Tamilnadu is presented in the *table-5*. The table found that the budget allocation of Tamilnadu share was very low than the other states in India in all mentioned years but at the same time the share is slightly in increasing trend from 2015 to 2017 likewise leprosy cases deducted. By their released amount wise concern, less amount was released in the financial year of 2016-17. The Tamilnadu Government was more amount of rupees utilised for removing or reducing leprosy diseases than the allocation amount of budget.so that the new leprosy deducted from Tamilnadu in controlled manner.

IV. FINDINGS AND CONCLUSION

The Tamilnadu contribution of growth of leprosy diseases was continuously decreased over the years except in the period of 2016 (3.7) and 2017 (3.6). The percentage share of Tamilnadu was slightly increased. So the Tamilnadu government will take more steps to reduce the number of leprosy cases. Then only it is possible to reach less than one like Kerala and Punjab. But in the number of leprosy cases wise concern, India's position was continuously increased and Tamilnadu position (vice versa) is continuously decreased. In overall the result

reflects the India will have to take some more effort to reduce the leprosy problem especially to concentrate major populous states, then only possible to decline trend.

On an average four persons only affected by the leprosy diseases per one lakh population in Tamilnadu every year. The prevalence rate of leprosy disease in present situation is very low than the previous mentioned years in Tamilnadu. The result clearly reflects the National Leprosy Eradication Programme was taken massive steps for the main reason was reduce the leprosy in Tamilnadu. In recent years, female and children are the most vulnerable group of population affected by the leprosy diseases in Tamilnadu. The percentage share of female was continuously increasing from 2011 onwards. So our government will concentrate more on children and female and divert the more amount of public health expenditure to the female and children leprosy cases. This is the way to reduce the number and percentage share female and children leprosy cases in Tamilnadu. Chennai (9.07%), Erode (9.93%) and Villupuram (9.48%) are the large number new leprosy cases deducted district in Tamilnadu. The budget allocation of Tamilnadu share was very low than the other states in India for the purpose of treatment of leprosy diseases. By their released amount wise concern, less amount was released in the financial year of 2016-17. The Tamilnadu Government was more of amount of rupees utilised for removing or reducing leprosy diseases than the allocation amount of budget. That's why the new leprosy cases deducted from Tamilnadu in controlled manner.

India achieved the goal of elimination of leprosy as a public health problem. Mahatma Gandhi did lot of work for upliftment of people affected with leprosy. There are lots of myths, socio-cultural beliefs, and the stigma attached to leprosy, so Government will conduct more awareness programme about misbelief and misconception of leprosy diseases to the public people. Most of the people they don't have awareness about its curability. So NGOs' will take responsibility to create awareness through the already cured people. Government will educate the children and female to prevent from the communicable diseases like leprosy. In that way only, Tamilnadu will reduce the number of leprosy affected cases in future.

V. REFERENCES

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Appendix

Table-1: Percentage Share of Leprosy Diseases in Tamilnadu

Year	India	Tamilnadu	Percentage Share
2011	83041	3195	3.8
2012	83687	3074	3.7
2013	80607	2930	3.6
2014	86319	2993	3.5
2015	88833	2888	3.3
2016	86028	3144	3.7
2017	88166	3207	3.6
2018	90709	3077	3.4

Source: NLEP Progress report, 2011-18

Table-2: Prevalence Rate of Leprosy Diseases in Tamilnadu

Year	Total Population	Cases affected	Prevalence Rate (PR)*
2011	72138958	3195	4.4
2012	73192187	3074	4.2

2013	74260793	2930	3.9
2014	75345001	2993	4.0
2015	76445038	2888	3.8
2016	77561135	3144	4.1
2017	78693528	3207	4.1
2018	80885648	3077	3.8

Source: NLEP Progress report, 2011-18
Note: PR= (leprosy cases/Total Population)*100000

Table-3:Percentage Share of Female and Children affected by Leprosy in Tamilnadu

Year	Female %	Children %	Persons
2011	45.1	22.7	3195
2012	39.3	15.4	3074
2013	34.4	13.0	2930
2014	37.4	11.7	2993
2015	41.3	15.8	2888
2016	60.6	24.8	3144
2017	65.9	27.2	3207
2018	NA	NA	3077

Source: NLEP Progress report, 2011-18

Table-4: District wise Percentage Share of New Leprosy Cases in Tamilnadu

S.No	District	2015	2016	2017
1	Ariyalur	1.25	0.91	0.95
2	Chennai	9.07	3.76	6.16
3	Coimbatore	3.25	2.68	3.63
4	Cuddalore	6.05	3.13	4.90
5	Dharmapuri	3.25	2.13	1.96
6	Dindigul	2.11	2.21	2.03
7	Erode	2.83	9.93	6.28
8	Kancheepuram	6.02	6.36	4.96
9	Karur	1.64	0.75	1.36
10	Krishnagiri	3.50	2.54	1.90
11	Madurai	5.49	4.04	3.10
12	Nagapattinam	1.25	2.11	2.39
13	Kanniyakumari	2.16	1.44	2.07
14	Namakkal	2.94	4.99	4.42
15	Perambalur	0.86	0.91	1.09
16	Pudukottai	2.14	1.97	1.68
17	Ramanathapura	1.33	1.04	1.01
18	Salem	4.91	5.58	6.56
19	Sivaganga	1.78	1.30	1.54
20	Thanjavur	3.14	4.06	4.88
21	Theni	2.19	2.36	1.88
22	Thirunelveli	2.80	3.41	3.61

23	Thiruvallur	4.52	6.68	3.77
24	Thiruvannamala	4.08	5.73	5.55
25	Thiruvarur	1.44	2.36	1.94
26	Thiruppur	1.91	1.64	1.34
27	Trichy	3.14	2.66	2.57
28	Tuticorin	1.66	1.30	1.22
29	Vellore	3.80	4.12	4.29
30	Villupuram	7.77	5.89	9.48
31	Virudhunagar	1.58	1.64	1.30
32	Nilgiris	0.14	0.37	0.18
	Tamilnadu	100.00	100.00	100.00

Source: NLEP Progress report, 2011-18

Table-5: Share of Allocation and Expenditure during Financial Year 2014-15 to 2016-17 in Tamilnadu

Category (Rs. In Lakhs)	2014-15	2015-16	2016-17
India			
Budget Allocation	3950.00	4098.00	3998.00
Released amount	3689.36	4098.00	2150.40
Utilised expenditure	4395.64	4371.07	4383.80
Unspent Balance	-706.28	273.07	-2233.40
Tamilnadu			
Budget Allocation	109.02	159.00	200.00
Released amount	109.02	159.00	150.50
Utilised expenditure	220.33	251.4	197.47
Unspent Balance	-111.31	-92.4	-46.97
Percentage Share			
Budget Allocation	2.76	3.88	5.00

Source: Ministry of Health & Family Welfare, GOI