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A REVIEW OF TREND OF LEPROSY SITUATION IN JAMNAGAR DISTRICT OF GUJARAT

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ABSTRACT

Objectives: This study was conducted to identify the trend of leprosy in Jamnagar district and to evaluate the impact of national leprosy elimination Program in Jamnagar District.

Methodology: This was a retrospective study conducted by analyzing records of District Tuberculosis Center, Jamnagar from April 2000 to March 2011. Different variables like Prevalence rate, Annual New case detection rate, Proportion of MB cases, Grade 2 disability cases, child cases and female cases among new cases etc. were covered in the study.

Results: There was a decrease in prevalence of leprosy in Jamnagar district. Annual case detection rate was decreasing from 12.53 per lakh population in the year 2000–01 to 2.36 per lakh population in the year 2010-11. Proportion of cases released from treatment was rising during initial six years followed by decline during next two years. Child ratio had been declined during the year 2008-09 followed by rise in last two years. There is rising trend of MB cases over years. The trend of deformity and female cases among new cases was not consistent.

Conclusions: The national leprosy elimination Program has impressive impact in maintaining the elimination level of leprosy in a district. Some sincere efforts like improving surveillance activities, IEC activities, improving cases released from treatment etc are still required for further improving leprosy situation in a district.

Key Words: Evaluation, National Leprosy Elimination Program, Trend of Leprosy

INTRODUCTION

Leprosy is probably the oldest disease known to mankind. Leprosy is a one of the foremost causes of deformities and crippling. It is estimated that approximately 25% of the patients who are not treated at an early stage of disease develop anesthesia and/or deformities.[1] The South East Asian region accounts for 60.69% of the global leprosy case load. The campaign against leprosy in India is accomplished through an official programme, The National Leprosy Control Programme was launched in 1954 and converted to National Leprosy Elimination Programme (NLEP) in 1983 with the objective to eliminate leprosy (reducing prevalence rate to less than one case per 10,000 population).[1] World Bank assisted NLEP phase-2 has been initiated since 2001 with goal to eliminate leprosy by March-2005. The strategy of NLEP

phase-2 was to detect leprosy patients from high endemic districts and urban slums through Special Action Plan for Elimination of Leprosy (SAPEL).[2] In India, The prevalence rate of leprosy had been reduced from 57 / 10000 in 1981 to 0.69 / 10000 in April 2011. This was great achievement but still a total of 0.83 lakh cases were on record as on 1st April 2011.[3] Gujarat state has achieved elimination level (Prevalence rate of 0.95 per 10,000 population in year 2004.[4] Analysis of trends of leprosy in a well-defined geographical population over a period gives useful information on how the disease has evolved over the years. A study was conducted to observe the trend of leprosy situation in Jamnagar district and impact of NLEP. It provides opportunities to explore the reasons for the changes observed.

MATERIAL AND METHODS

A retrospective analysis of the recorded data obtained from District Tuberculosis center, Jamnagar from April 2000 to March 2011was carried out. Data were obtained for each financial year separately i.e. data for the year 2000-01 means data from 01st April, 2000 to 31st March, 2001. The indicators used are: Prevalence rate per 10000 population, new case detection rate per 100000 population (NCDR), number released from treatment, cases on treatment at the end of year (31st March of each year), Proportion (%) of multi-bacillary (MB) cases among new cases, Proportion (%) of "grade 2 disability among new cases", Proportion (%) of "child cases among new cases" and Proportion (%) of "female cases among new cases". Prevalence rate was calculated at the end of each year based on total number of cases on treatment at 31st March of each year. Total number of cases during year calculated by summing the new cases detected during given year and total number of cases on treatment at the end of previous year. Grade 2 disability is visible deformity or damage present in hands and feet or in case of eyes it is severe visual impairment (vision worse than 6/60, inability to count fingers at 6m) also includes lagophthalmos, iridocyclitis and corneal opacities.[5]

RESULTS

The trend of Prevalence of leprosy was declining. The prevalence rate was declined from 0.72 per 10000 populations in 2000-01 to 0.1 per 10000 populations in 2005-06. Then, it increased and reached to 0.46 per 10000 population in the year 2007-08 and again it had been decreased up to 0.23 per 10000 population in the year 2010-11 (Table 1).

Table 1: Prevalence Rate and New case detection rate of leprosy in Jamnagar district.

Year	Mid Year Population	New Cases Detected	New Case Detection Rate (Per 100000)	Prevalence Rate (Per 10000 population)
2000 – 01	1915625	226	12.53	0.72
2001 – 02	1952533	177	9.07	0.53
2002 – 03	1992169	146	7.33	0.58
2003 – 04	2032610	127	6.25	0.51
2004 – 05	2073873	82	3.95	0.21
2005 – 06	2115972	53	2.45	0.1
2006 – 07	2158926	49	2.27	0.18
2007 – 08	2202752	104	4.82	0.46
2008 – 09	2247467	71	3.28	0.31
2009 – 10	2293091	56	2.44	0.23
2010 – 11	2339640	51	2.36	0.23

The New case Detection Rate (NCDR) had been decreased from 12.53 per 100000 population in the year 2000-01 to 2.27 in the year 2006-07 followed by increase in the NCDR in the year 2007-08 to 4.82 per 100000 population and then decrease thereafter and reached to 2.36 per 100000 population in the year 2010-11. (Table 1)

Proportion of cases released from treatment out of total cases during year was increasing up to 78.35% in the year 2005-06 followed by decreasing the proportion to 28.17% in the 2007-08. There after it was increasing again to 60.69% in the next year and afterward it was decreasing and reached to 51.92% in the 2010-11. (Table 2)

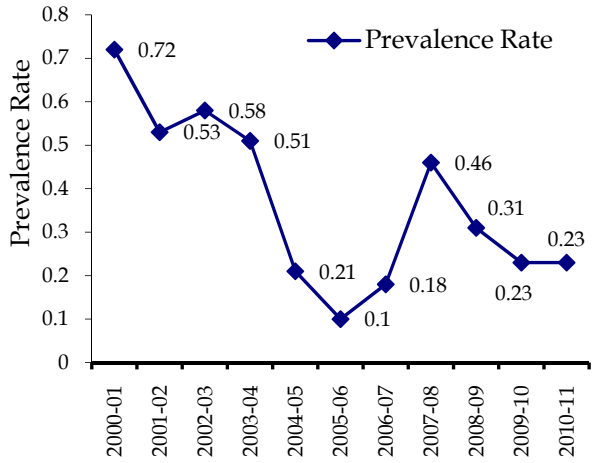

Figure 1: Trend of leprosy prevalence in Jamnagar district

The trend of MB cases among new cases was rising. The proportion of MB cases among new cases was increasing from 50.89% in 2000-01 to 88.32% in 2010-11 (Table 3).

The trend of proportion of child cases among new cases was not consistent over the years. It was remarkably declined in the year 2008-09 to 1.40 % followed by rise in the next two years and reached to 11.76% in the 2010-11 (Table 3).

The proportion of cases with grade 2 disability among new cases was reduced from 2.65% in 2000-01 to 0.0% in 2005-06. Then, it rose in the year 2006-07 (6.12%) and 2008-09 (5.63%) followed by fall and reached to 0.0% in the year 2010-11 (Table 3).

Table 2: Proportion of cases who released from treatment out of total cases of leprosy during respective year in Jamnagar district

Year	New Cases Detected (No.)	Patient on Treatment (No.)	Total Cases (No.)	Release from Treatment (RFT) cases (%)
2000 – 01	226	138	327	187 (57.19)
2001 – 02	177	103	315	141 (44.76)
2002 – 03	146	116	249	133 (53.41)
2003 – 04	127	104	243	138 (56.79)
2004 – 05	82	44	186	135 (72.58)
2005 – 06	53	21	97	76 (78.35)
2006 – 07	49	38	70	32 (45.71)
2007 – 08	104	102	142	40 (28.17)
2008 – 09	71	67	173	105 (60.69)
2009 – 10	56	53	123	70 (56.91)
2010 – 11	51	49	104	54 (51.92)

There was a rise and fall of the proportion of female cases among new cases during study period. It was ranging from 23.1% to 55.1%. So, the trend of female cases among the new cases was not consistent (Table 3).

Table 3: MB Cases, Cases with Grade 2 Disability, Child cases and Female cases among New Cases of Leprosy

Year	New cases	MB cases among new cases (%)	Child cases among new cases (%)	Cases with grade II disability among new cases (%)	Female cases among new cases (%)
2000 – 01	226	115 (50.89)	20 (08.85)	06 (2.65)	-
2001 – 02	177	95 (53.67)	15 (08.47)	01 (0.85)	-
2002 – 03	146	83 (56.85)	13 (08.90)	01 (0.69)	64 (43.8)
2003 – 04	127	86 (67.72)	10 (07.87)	02 (1.57)	51 (40.2)
2004 – 05	82	52 (63.41)	05 (06.10)	01 (1.22)	37 (45.1)
2005 – 06	53	29 (54.72)	05 (09.43)	00 (0)	16 (30.2)
2006 – 07	49	37 (75.51)	04 (08.16)	03 (6.12)	27 (55.1)
2007 – 08	104	71 (68.27)	09 (08.65)	00 (0)	24 (23.1)
2008 – 09	71	63 (88.73)	01 (01.40)	04 (5.63)	17 (23.9)
2009 – 10	56	46 (82.10)	05 (08.93)	01 (1.79)	25 (44.6)
2010 – 11	51	45 (88.32)	06 (11.76)	00 (0)	19 (37)

DISCUSSION

This study revealed that there is declining trend of prevalence of leprosy in Jamnagar district from 0.72 in 2000-01 to 0.23 in 2010-11. This trend is similar with national and state trend. Prevalence of leprosy in India reduced from 5.3 in 2000-01 to 0.72 in 2010-11.[3] Prevalence of leprosy in Gujarat reduced from 1.42 in 2001-02 to 0.77 in 2010-11.[6,7] Similar trend was also observed by Singh A in tribal Gujarat where prevalence was reduced from 2.65 in 2003-04 to 1.90in 2007-08.[8]

The study revealed that there was a decline in NCDR from 12.53 in 2000-01 to 2.27 in 2006-07 followed by a sudden rise in 2007-08. The decline in NCDR in the initial years was due to leprosy services integrated with general health care system and active case detection had been given up. The sudden rise in the NCDR in the year 2007-08 was due to further intensification of program activities i.e. widespread Block Leprosy Awareness Campaign (BLAC) in the district, House to House visit etc. during 2007-08 in Jamnagar district. Similar findings observed by Singh A in tribal Gujarat.[8] While, Vijayakumaran P, Prasad B, Krishnamurthy P. in 10 districts of Bihar observed the NCDR remained high during the 9-year period (1996-2004) and did not show any declining trend.[9]

There is a consistent rise in the cases released from treatment in the initial years indicating good coverage of leprosy cases with MDT and thus reducing the infection load in community. This initial rise followed by reduction in the proportion of cases released from treatment in the year 2006-07 and 2007-08. Reduction in the proportion of cases released from treatment leads to sustaining the infection load in the community which was reflected by sudden rise in the prevalence rate and NCDR in the year 2007-08.

There is a consistent rise over years in the proportion of MB cases in this study. Similar trend of MB proportion among new cases is observed in the state during study period.[10] This is because with elimination, the decline of PB cases is more marked which in turn leads to an increase in MB proportion. It also reflects failure of early case detection and delayed reporting by the patient to health facility. This rise in MB cases provides a continuous important source of infection in the community. Singh A observed MB ratio ranged between 40% and 50% in the year 2003-04 to 2007-08 in tribal Gujarat.[8]

The trend of Grade 2 deformity among newly detected leprosy cases reflected timely treatment under NLEP and better awareness creation regarding leprosy amongst the community. Similar finding observed by Vijayakumaran P, Prasad B, Krishnamurthy P. in 10 districts of Bihar where deformity among newly detected leprosy patients declined up to 1%.[9] The study by Singh A in tribal Gujarat revealed rising of Grade 2 deformity cases during 2003-04 to 2005-06 followed by declining cases in 2006-07.[8]

There was not a consistent trend of proportion of child cases among new cases in this study. It indicates that transmission of leprosy is not reduced in the district and presence of active infection of leprosy in community. Similar findings observed by Singh A in tribal Gujarat.[8] The trend of female cases among the new cases was not consistent. This also indirectly indicated the health-seeking behaviour of women in accessing health services. Ranganadha Rao PV, et al in Subarnapur district, Orissa State during the years 2002 to 2004 observed rapid fall in the female-specific new case-detection rates from 11 to 2.5.[11]

CONCLUSION AND RECOMMENDATIONS

Based on analysis of data, it was finally concluded that NLEP was making an impressive impact on leprosy status in the Jamnagar district and elimination level of leprosy had been maintained. The rise in the prevalence rate and NCDR in the year 2007-08 reminds some challenges in the district for further improving the leprosy situation. The challenges are missing out of early cases, delayed reporting of patients to health care facility, reduction in the proportion of cases released from treatment, migration of leprosy cases etc. The rise in the MB ratio and occurrence of child cases signals the presence of active infection of leprosy in the community. If these challenges are not attended then the leprosy situation may be worsened and causes difficulty in maintaining the elimination of leprosy in the district. So, there is a need of some sincere efforts to combat these challenges like improving surveillance activities, IEC activities, improving cases released from treatment etc for further improving leprosy situation in the district.

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