

## Short Research Article

# Caries Status Among Leprosy Patients: A KAP Survey

### ABSTRACT:

Leprosy is a chronic granulomatous dreadful disease affecting the body causing severe disfigurement and loss of function. The patients infected with this disease are ostracised in the society and their oral health status is often neglected. The study was conducted on 30 patients treated in St. John leprosy colony, Chengalpet. Of these 30% were female patients and 70% were male patients. Age ranges between 40 and 70 with the mean age being 52. Subjects diagnosed as leprotic (tuberculoid, borderline, and lepromatous) and under multidrug resistance therapy were included in the study. Dental caries was diagnosed using mouth mirror and explorer. The data was analysed and has been charged. The cumulative DMFT score for the surveyed population was 197. Out of 197 carious teeth 73 belonged to class I, 21 belonged to class II and class III, 22 belonged to class IV, 43 belonged to class V, 17 belonged to class VI. The caries status in patients with leprosy is active and significant. Hence rigorous awareness and treatment measures should be undertaken to address this.

**KEYWORDS:** Leprosy, caries status, oral hygiene, awareness, oral manifestations

### INTRODUCTION:

Leprosy is a chronic granulomatous disease caused by *Mycobacterium leprae*, which mainly affects the skin, peripheral nerves, upper respiratory tract, and the eyes. Left untreated, leprosy can be progressive, causing permanent damage to the skin, nerves, limbs, and eyes<sup>1,2</sup>. Leprosy, which was supposed to be eradicated in India 8 years ago, still records the highest number of fresh cases globally. Leprosy was declared eliminated on January 1, 2006, with the prevalence of 0.98/10,000 populations in India<sup>2</sup>. Multidrug therapy being the main weapon against leprosy and has considerably reduced the incidence of leprosy in India significantly from 8.9/10,000 in 2000 to 1.1/10,000 in 2010. Yet, 1.34 lakh new leprosy cases were reported in India during the year 2009–2010. According to WHO, 65% of the fresh cases globally reported are from India. However, the prevalence of the disease has decreased considerably after the introduction of multidrug therapy<sup>3,4</sup>. The efficacy of the therapy is largely dependent on the early diagnosis and the disease spreads by oronasal mucosa<sup>4,5</sup>.

The disease was first described clinically and microscopically by Armauer Hansen in 1874. Leprotic patients suffered from severe social stigma and were isolated from their families, communities, and even health professionals known since ancient times as “the death before death<sup>6</sup>.” Oral health improvement is a significant challenge in many developing countries; moreover, dental caries remain a severe health problem in many developed countries<sup>7,8</sup>. The World Health Organization (WHO) has developed indices for definitions, diagnostic criteria and classifications of caries that can be used to quantify oral health status within clinical practice and in epidemiological studies<sup>9</sup>.

The questions that often arise are how serious are dental caries in people affected by leprosy, and what are the possible causes for the high incidence of caries in this group. However, there is no data on the status of dental caries in patients with leprosy in India. Most dentists focus little attention on people with leprosy, because in India, most patients with leprosy live in remote ‘leprosy villages’ and remain isolated because of unreasonable negative attitudes of the general public<sup>7</sup>. Also, professionals who work at the Center for Disease Control and Prevention of Leprosy are not involved in patients’ oral care. Thus, the oral health situation of patients with leprosy needs attention from dentists.

The aim of the study to evaluate the knowledge and awareness of caries among leprosy patients.

### MATERIALS AND METHODS:

The study was conducted on 30 patients treated in St. John leprosy colony, Chengalpeta. Of these 30% were female patients and 70% were male patients. Age ranges between 40 and 70 with the mean age being 52. Subjects diagnosed as leprotic (tuberculoid, borderline, and lepromatous) and under multidrug resistance therapy were included in the study. Dental caries was diagnosed using mouth mirror and explorer.

## RESULTS:

The data was analysed and has been changed. The cumulative DMFT score for the surveyed population was 197. Out of 197 carious teeth 73 belonged to class I, 21 belonged to class II and class III, 22 belonged to class IV, 43 belonged to class V, 17 belonged to class VI.

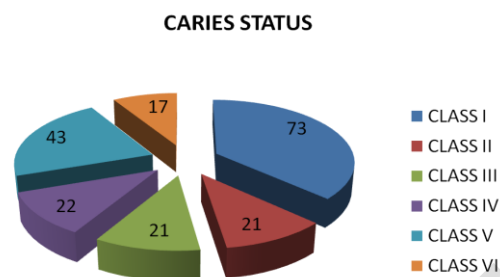


Figure 1. Caries status among leprosy patients

## DISCUSSION:

This paper focused on caries status among people affected by leprosy in a colony in Chennai. From the results obtained we are able to understand that the knowledge and awareness of oral hygiene was very poor among the patients. The 30 subjects observed in this investigation ranged from 40-70 with their mean age to be 52. Most of the. Brushed only once a day, people suffering from leprosy have many oral manifestations and maintaining a good oral hygiene is necessary, we come to know that these people require assistance while brushing due to deformities and they solely depend on their caretakers.

The present data showed that overall dental health was very poor and the need for dental treatment high and urgent in people with leprosy.

There were several limitations to this study: in particular we were unable to compare the general population of people affected by leprosy in Chennai, and we had observations at only one time point. However basic dental health cross-sectional surveys can provide a sound basis for estimation of the present oral health status of a population and its future needs for oral health care. They can produce reliable baseline data for development of national or regional oral health programmes and for planning for appropriate numbers and types of personnel for oral care.

Today, leprosy is one of the most debilitating diseases known to mankind. Once diagnosed with leprosy, patients face the long and uphill task of recovering and reintegrating into their community. Employers turn away the people who are affected by the disease even if they have been treated or cured. This puts the patient in a very hard financial situation. Most of them are secluded and do not mingle with the community and only a mere percentage of them have ever been to a dentist. This shows us why there is a void in the basic knowledge of oral hygiene practices among the patients.

A separate study in Spain showed that leprosy patients had less advanced dental caries because they lived in a sanatorium, where the patients received earlier diagnosis and treatment<sup>10</sup>. In contrast, our study involved patients who were older, had more advanced leprosy and lived in leprosy villages, where effective multidrug therapy is not readily available. So, the lower DMFT scores reported in the studies performed in India and Spain<sup>10-12</sup> compared with those in the present study, can be explained. However, it is noteworthy that the DMFT scores for patients with leprosy were higher than those found for the general populations in India, Spain and China<sup>10,12-14</sup>. In contrast, Brazilian patients with leprosy had lower DMFT scores than the healthy Brazilian population<sup>15</sup>. All patients included in that study were literate and lived in an urban area. Therefore, the

possibility of literacy rates among leprosy patients and their living standard having an impact on the DMFT scores cannot be disregarded.

This research also showed that the DMFT scores were related to the educational background of patients with leprosy, suggesting that increased education might enhance an awareness of oral health care and reduce the prevalence of dental caries. It should be pointed out that most patients with leprosy were found to be illiterate or to have little education, which affected both their quality of life and dental health, and both contributed to the high morbidity from dental caries<sup>16-18</sup>.

In conclusion, people with leprosy lacked knowledge of self-care and especially self-awareness in relation to dental conditions. Normative treatment needs of people affected by leprosy were very high. It is urgent to improve oral health education and oral health care for these people. Considering that many people with leprosy live in leprosy colonies, which have gradually changed from the resettlement of people affected by leprosy to rehabilitation centres, oral health education and services could conveniently be integrated into already existing leprosy rehabilitation programmes.

## **CONCLUSION:**

Leprosy is completely curable with modern medicine, but if it's not treated properly, it can lead to permanent damage to the skin, nerves, limbs and eyes. Most of the time, people either do not have access to affordable treatment or hide their disease due to their fear of being shunned. The social stigma and the poverty usually stop them from seeking medical attention. Also, people are unaware of the fact that the disease can no longer be spread if the affected person starts taking treatments. Therefore, implying an urgent need for awareness initiative for oral health in the implementation of good oral health practices among people affected with leprosy.

## **REFERENCES:**

- [1] McAdam AJ, Milner DA, Sharpe AH. Infectious diseases. In: Kumar V, Abbas AK, Aster JC, editors. Robbins and Cotran Pathologic Basis of Disease. 9th ed. Ch. 8. Philadelphia: Elsevier; 2010. p. 377.
- [2] Kumar A, Husain S. The burden of new leprosy cases in India: A population-based survey in two states. *ISRN Trop Med* 2013. 2013:1–8. Article ID: 329283.
- [3] Kumar A, Girdhar A, Yadav VS, Girdhar BK. Some epidemiological observations on leprosy in India. *Int J Lepr Other Mycobact Dis*. 2001;69:234–40.
- [4] Rawlani SM, Rawlani S, Degwekar S, Bhowte RR, Motwani M. Oral health status and alveolar bone loss in treated leprosy patients of central India. *Indian J Lepr*. 2011;83:215–24.
- [5] . Thirugnanasambandan TS, Latha S, Kumar MS. Clinical and pathological evaluation of oral changes in leprosy. *Indian J Multidiscip Dent*. 2011;1:105–9.
- [6] Dogra S, Narang T, Kumar B. Leprosy – Evolution of the path to eradication. *Indian J Med Res*. 2013;137:15–35.
- [7] Khalifa N, Allen PF, Abu-bakr NH . A survey of oral health in a Sudanese population. *BMC Oral Health* 2012 24: 12–15.
- [8] Petersen PE, Bourgeois D, Ogawa H . The global burden of oral diseases and risks to oral health. *Bull World Health Organ* 2005 83: 661–669. PubMed
- [9] Núñez-Martí JM, Bagán JV Scully C Leprosy: dental and periodontal status of the anterior maxilla in 76 patients. *Oral Dis* 2004. 10: 19–21.
- [10] Rawlani SM, Rawlani S Degwekar S Oral health status and alveolar bone loss in treated leprosy patients of central India. *Indian J Lepr* 2011. 83: 215–224.
- [11] Dave B, Bedi R. Leprosy and its dental management guidelines. *Int Dent J* 2013. 63: 65–71
- [12] Wang HY, Petersen PE, Bian JY The second national survey of oral health status of children and adults in China. *Int Dent J* 2002. 52: 283–290.

[13] Wang HY. The personal opinion on the interpretation of data from the national epidemiological survey of oral health: concerning the expression of the prevalence of dental caries among middle and old age persons in China. *Zhonghua Kou Qiang Yi Xue Za Zhi* 2013. 48: 260–261.

[14] Souza VA, Emmerich A, Coutinho EM, Dental and oral condition in leprosy patients from Serra, Brazil. *Lepr Rev* 2009. 80: 156–163.

[15] An J-G, Ma J-H, Xiao S-X Quality of life in patients with lepromatous leprosy in China. *J Eur Acad Dermatol Venereol* 2010. 24: 827–832

[16] Shumin C, Diangchang L, Bing L Role of leprosy villages and leprosaria in Shandong Province, People's Republic of China: past, present and future. *Lepr Rev* 2003. 74: 222–228

[17] Tsutsumi A, Izutsu T, Islam AM The quality of life, mental health, and perceived stigma of leprosy patients in Bangladesh. *Soc Sci Med* 2007. 64: 2443–2453.

[18] FENG YUNZHI, Dental health and treatment needs in people with leprosy in China, *Lepr Rev* (2014) 85, 311–321.

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