

## Original Article

### Comparison of Periodontal Health between Rural and Urban Population

<sup>1</sup>Anitha G., <sup>2</sup>Nagaraj M

<sup>1</sup>Department of Dentistry, Assistant professor, ESIC Medical College Gulbarga, Karnataka, <sup>2</sup>Department of Oral Surgery, Professor and Dean, ESIC Dental College, Gulbarga, Karnataka, India

#### ABSTRACT:

**Background:** Periodontal disease affects the surrounding and supporting tissues around the teeth and is most commonly responsible for loss of teeth. Periodontal disease is more frequently seen in rural population than in urban this is mainly due to difference in nutritional habits, poor general and oral etiquetes, poor dental health care habits, lack of adequate rural dental equipment and preventive measures in rural areas. The present study was conducted to establish difference in periodontal status amongst subjects of rural and urban areas reporting to the hospital. **Materials and methods:** The sample subjects were aged between 20- 80 years of age. All the subjects were made to fill a proforma based on their habits and demographics. Interview based questions were also included. This study was conducted for 3 months duration. All the data obtained was recorded in a tabulated forma and analysed using SPSS software. **Results:** The study included 550 subjects, out of these 270 were males and 280 were females. The mean age of the study subjects was 42.45+/- 5.89 years. There were 60% urban subjects having code 2. There were 5% urban subjects with code 4. There were 13% urban subjects having code 2. **Conclusion:** There is wide variation in the periodontal status in India itself. From the study we can conclude that if dental treatment and education are provided to rural subjects the periodontal conditions can be improved.

**Key words:** Education, Periodontal, Rural.

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**Corresponding Author:** Dr. Anitha G., Department of Dentistry, Assistant professor, ESIC Medical College Gulbarga, Karnataka, India

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#### INTRODUCTION

Periodontal disease has universal distribution according to various epidemiological surveys around the world. Periodontal disease affects the surrounding and supporting tissues around the teeth and is most commonly responsible for loss of teeth. In the year 1982, Ainamo et al developed community periodontal index for treatment needs to evaluate the treatment needs of the subjects.<sup>1</sup> Later in the year 1995, Baelum et al came with an observation that this index resulted in underestimation of periodontal treatment needs amongst younger individuals.<sup>2</sup> Few years later, oral health surveys by WHO, included community periodontal index that included attachment loss to overcome these limitations.<sup>3</sup> In a study conducted by Loe et al, there has been widespread variation in the periodontal status amongst the rural and urban populations.<sup>4</sup> The study was conducted amongst Norwegian teachers and tea labourers of Srilanka. The study showed great variation amongst both with greater attachment loss amongst the labourers. This can be due to variation in age, education status, socioeconomic class, oral hygiene practices and habits

like smoking and tobacco chewing. Similar observations were also reported study conducted by Kurien et al.<sup>5</sup> Periodontal disease is more frequently seen in rural population than in urban this is mainly due to difference in nutritional habits, poor general and oral etiquetes, poor dental health care habits, lack of adequate rural dental equipment and preventive measures in rural areas.<sup>6</sup> The present study was conducted to establish difference in periodontal status amongst subjects of rural and urban areas reporting to the hospital.

#### MATERIALS AND METHODS

The study included a total of 600 individuals were evaluated from both urban and rural areas of the district. The sample subjects were aged between 20- 80 years of age. All the subjects were informed about the study and a written consent was obtained from all in their vernacular language. Subjects from the colleges, old age homes and schools all were included in the study. Out of these there were 50 subjects who were denture wearers or didn't had teeth, were edentulous. Therefore they were excluded from the study. All the subjects were made to fill a

proforma based on their habits and demographics. Interview based questions were also included. The data recording was on the basis of WHO oral health assessment survey form given in 1997. Under adequate light with all subjects seated on dental chair complete oral examination was done. Using dental probe, CPI was noted. Probing was done on distal, mesial, facial and lingual surfaces. This study was conducted for 3 months duration. All the data obtained was recorded in a tabulated forma and analysed using SPSS software.

**RESULTS**

The study included 550 subjects, out of these 270 were males and 280 were females. The mean age of the study subjects was 42.45+/- 5.89 years.

Table 1 shows the association between area and community periodontal index. In urban subjects 14.6% subjects had code 0, 3% had code 1. There were 60% urban subjects having code 2. There were 5% urban subjects with code 4. In rural subjects 2.4% subjects had code 0, 2.8% had code 1. There were 25.2% urban subjects having code 2. There were 18% urban subjects with code 4.

Table 2 shows the association between area and attachment loss. In urban subjects 59% subjects had code 0, 24% had code 1. There were 13% urban subjects having code 2. There were 1% urban subjects with code 4. In rural subjects 43.2% subjects had code 0, 30.8% had code 1. There were 17.2% urban subjects having code 2. There were 2% urban subjects with code 4.

compared to non-Amish group. The risk factors for periodontal disease include are male gender, higher age group, calculus and poor oral health education.<sup>6</sup> In a study conducted by Dolan et al. a higher prevalence of attachment loss was seen amongst the rural population and low income subjects.<sup>10</sup>

According to Singh et al<sup>11</sup> low educational knowledge and poor socio-economic status were responsible for the high prevalence of periodontal condition amongst the rural population. According to the present study, in urban subjects 14.6% subjects had code 0, 3% had code 1. There were 60% urban subjects having code 2. There were 5% urban subjects with code 4. In rural subjects 2.4% subjects had code 0, 2.8% had code 1. There were 25.2% urban subjects having code 2. There were 18% urban subjects with code 4. In urban subjects 59% subjects had code 0, 24% had code 1. There were 13% urban subjects having code 2. There were 1% urban subjects with code 4. In rural subjects 43.2% subjects had code 0, 30.8% had code 1. There were 17.2% urban subjects having code 2. There were 2% urban subjects with code 4. As per a study by Rao et al, there were more number of subjects in rural area that had periodontal disease.<sup>12</sup>

This difference may be due to presence of risk factors like tobacco chewing, oral hygiene practices and smoking. There is also poor awareness about oral hygiene. The study was conducted for a short duration of time with few subjects.

**Table1:** Association between area and community periodontal index

SCORE	0	1	2	3	4	Total
<b>AREA</b>						
<b>Rural</b>	6 (2.4%)	7 (2.8%)	63 (25.2%)	67 (26.8%)	45 (18%)	250
<b>Urban</b>	44 (14.6%)	9 (3%)	180 (60%)	54 (18%)	15 (5%)	300

**Table 2:** Association between area and loss of attachment

SCORE	0	1	2	3	4	Total
<b>AREA</b>						
<b>Rural</b>	108 (43.2%)	77 (30.8%)	43 (17.2%)	17 (6.8%)	5 (2%)	250
<b>Urban</b>	177(59%)	72(24%)	39(13%)	9(3%)	3(1%)	300

**DISCUSSION**

Around the globe, periodontal disease is the one the common and major dental disease amongst the human populations.<sup>7</sup> There have been very few studies in India regarding periodontal disease in rural and urban area. In Punjab, 96.8% of the urban populations and 97.2% of the rural populations showed the evidence of calculus.<sup>8</sup> According to a study by Maity et al. Amongst rural populations, a low destructive periodontal disease was found, but a high amount of calculus was seen in India.<sup>9</sup> The rural subjects of Greece had increased prevalence of deep pockets as compared to the urban. It was seen that poor oral hygiene, plaque and Calculus levels and bleeding on probing, were equally present amongst both populations. The rural subjects of Canada had slightly higher for periodontal disease values when

Also the study was restricted to a particular subpopulation. Similar studies need to be conducted amongst larger subjects and in different districts. Oral health and oral hygiene practices need to be illustrated amongst the rural area subjects.

**CONCLUSION**

Periodontal disease is a prevalent disease worldwide. India is a nation with diverse lifestyle, habits and customs. Therefore there is wide variation in the periodontal status in India itself. From the study we can conclude that if dental treatment and education are provided to rural subjects the periodontal conditions can be improved.

## REFERENCES

1. Ainamo J, Barames D, Beagrie G. Development of the World Health Organization, Community Periodontal Index Treatment Needs. *Int Dent J* 1982;32:281-291.
2. Baelum V, Manji F, et al. Relationship between CPITN and periodontal attachment loss findings in an adult population. *J Clin Periodontol* 1995;22(2):146-152.
3. Oral Health Surveys: Basic Methods: World Health Organization, Geneva 1997: 4th Ed
4. Loe H, Anerud A, Boisen H. The natural history of periodontal disease in man. study and baseline data: *J Periodon Res* 1978;13:550-562.
5. Kurien M, (1996). Assessment of periodontal treatment needs of a rural population using CPITN .An unpublished report. MDS Dissertation submitted to university of MAHE.
6. Stjepan palj, Darije PlanEak. Comparison of Periodontal Health in Two Different Rural Population Types in Croatia. *Acta Stomatol Croat* 2000; 183-87.
7. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century– the approach of the WHO Global Oral Health Programme. *Community Dentistry and oral epidemiology*. 2003 Dec 1;31(s1):3-24.
8. Singh GP, Soni BJ. Prevalence of periodontal diseases in urban and rural areas of Ludhiana, Punjab. *Indian J Community Med*. 2005 Jan 1;30(4):127-9.
9. Maity AK, Banerjee K, Pal TK. Low levels of destructive periodontal disease in a rural population in West Bengal, India. *Community dentistry and oral epidemiology*. 1994 Feb 1;22(1):60-1.
10. Dolan TA, Gilbert GH, Ringelberg ML, Legler DW, Antonson DE, Foerster U, et al. (1997). Behavioural risk indicators of attachment loss in adult Floridians. *J Clin Periodontol* 24:223-232.
11. Singh S, Gupta ND, Sharma VK. Periodontal health status of rural and urban population of Aligarh District of Uttar Pradesh State. *JISP* 2005;9:86-90.
12. Rao S, Singh BP, Karr P. Periodontal status and treatment needs of an adult rural community. *JPFA* 1993;7:73-77.