

Assessment Of Periodontal Status And Treatment Needs In Karnataka, India

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Abstract

Objectives :- Increasing incidence of periodontal disease is a cause of concern and recognized potential public problem. The aim of this study was to understand the epidemiological profile of periodontal disease in rural population of Belgaum district, India. **Materials and Methods :-** 1680 dentate adult subjects were examined from 12 villages in Belgaum district, Karnataka, India, for prevalence of periodontal status and their treatment needs by using Community Periodontal Index for Treatment Needs (CPITN) indexing system. Subjects were drawn from the age groups of 15-19 yrs, 20-29 yrs, 30-34 yrs, 45-60 yrs and 61 yrs & above. **Results :-** It was observed that as the age increased, the CPITN score also increased. While, CPITN score 2 (calculus) was most predominant in age groups 15-19 yrs & 20-29 yrs, CPITN score 3 (pathological pocket of 4-5 mm) was more common in the age groups 30-44 yrs & 45-60 yrs. CPITN score 4 (pathological pocket of >6 mm) was the highest in age groups 64 yrs & above. The treatment need was mainly TN-1 (oral hygiene instructions). The need for complex treatment i.e. TN-3 (deep scaling, root planning or surgery) was less in age group 15-19 yrs, but TN-3 increased with increasing age and was highest in the age group 61 yrs & above. **Conclusion :-** The present study indicates increase prevalence of periodontal diseases and aggressive treatment needs as the age progresses in the rural population. Therefore, adequate awareness regarding oral hygiene and importance on primary prevention could help in reducing the prevalence of periodontal disease to a great extent.

INTRODUCTION

Periodontal disease is the most prevalent in adult population.⁽¹⁾ It affects the supporting and investing tissues of the teeth and recognized as a major health problem all over the world.⁽²⁾

The severity of disease may vary, but in most countries the adult populations experience distressing symptoms of periodontal disease such as bleeding and receding gums and loosening and migration of teeth. These changes reduce the physiologic and social values of the dentitions. Periodontal disease in India is still the greatest single cause of tooth loss.⁽³⁾

The WHO Community Periodontal Index for Treatment Needs is a practical and relevant procedure for assessing periodontal treatment needs of populations.⁽⁴⁾ Several surveys have been carried out worldwide by making use of CPITN system.^(1,2,5) The aim of this survey was to determine the periodontal health status and treatment needs of rural population of Karnataka by using CPITN system. The establishment of the global goals for oral health for all by the

year 2000 A.D. has made an implication that there is an increased need to collect epidemiological data on various oral health problems.⁽⁶⁾ Data on prevalence, incidence and severity of the disease can help in evaluating the significance of the disease and its consequences.

METHODS

The total study population consisted of 1680 subjects which were randomly selected from 12 villages of Belgaum district in the age groups of 15 yrs and above. Dental check up camps were organized in the villages with the help of local health worker. The examination of the subjects in this study was conducted according to WHO guidelines using the WHO CPITN –E probe. The teeth examined were 17, 16, 11, 26, 27, 36, 37, 31, 46 and 47. Scoring criteria were followed as suggested by Ainamo et al (1982).⁽⁴⁾ To avoid the bias, the author himself examined all the subjects.

RESULTS

In the study 1,680 subjects were surveyed from rural parts of Belgaum district, in which 804 (47.89%) males and 876 (52.14%) females were assessed for. They were examined

and distributed into five age groups according to WHO Standard Age Grouping i.e.15-19 years (Group I), 20 –29 years (Group II), 30-44 years (Group III), 45-60 years (Group IV), 61 yrs and above (Group V). (Table 1)

(Table 2) showed that in the group I, percentage of the CPITN score 2 were the highest (39.6%). The percentage of score 1 and score 0 were almost similar in this group. In the group II, the CPITN score 2 was the highest (49.3%) followed by score 3. In the groups III and IV, the percentage of CPITN score 3 was the highest (48.6% and 59.3% respectively); whereas in group V, the percentage of CPITN score 4 was the highest (45.6%).

The results clearly show that as the age increases, the severity of periodontal disease increases with age.

The overall treatment needs observed showed that the TN 0 decreased from 30 % in group I to 1.3 % in group V. TN 1 increased from 70 % in group I to 98.5 % in group V. TN 2 increased from 43 % in group I to 97 % in group V and TN 3 also increased from 0.8 % in group I to 45.6 % in group V.

The overall treatment needs results suggest that the prevalence of periodontal disease increased with an increasing age and also the periodontal treatment needs (Table 3).

Figure 1

TABLE 1: Division of population

Groups	Age Group	Male		Female	
		Number	Percentage	Number	Percentage
Group I	15-19	56	7	60	6.8
Group II	20-29	145	18	155	17.7
Group III	30-44	297	37	320	36.5
Group IV	45-60	169	21	180	20.5
Group V	61 Yrs & Above	137	17	161	18.4
Total		804		876	

Figure 2

TABLE 2: Percentage of Dentate persons showing signs of periodontal disease status in all age groups by highest CPITN code number recorded in rural population

Group	Age (in Years)	N	H	%	B	%	C	%	P1	%	P2	%
I	15-19	116	35	30.2	31	26.7	46	39.6	3	2.6	1	0.8
II	20-29	300	40	13.3	47	15.7	148	49.3	52	17.3	13	4.3
III	30-44	617	33	5.3	15	2.4	169	27.4	300	48.6	100	16.2
IV	45-60	349	10	2.9	8	2.3	33	9.4	207	59.3	91	26.1
V	64 yrs & above	298	4	1.3	4	1.3	26	10.7	122	40.9	136	45.6

H= Healthy (score 0) , B= Bleeding (score 1), C= Calculus (score 2) , P1= shallow pocket 4-5 mm (score 3) , P2 = Deep pocket >5mm (score 4)

Figure 3

TABLE 3: Percentage of treatment needs in total population

	Age groups (years)	TN 0	%	TN 1	%	TN 2	%	TN 3	%
Group I	15-19	35	30	81	70	50	43	1	0.8
Group II	20-29	40	13	260	87	213	71	13	4.3
Group III	30-34	33	5.3	584	94.6	569	92.2	100	16.2
Group IV	45-60	10	2.9	339	97.1	331	94.8	91	26.1
Group V	61 yrs & above	4	1.3	294	98.5	290	97	136	45.6
	TOTAL	122	7.3	1558	93	1453	86.5	341	20.3

DISCUSSION

Oral health is an integral part of general health. The universality of periodontal disease is very well established and Oral appearance affects self esteem and the willingness to interact with others. Appropriate nutritional intake can also be influenced by incapacity to masticate or persisting pain due to oral diseases.⁽⁷⁾ Several attempts have been made to develop methods for assessing periodontal disease status and treatment needs on a population basis which would help in the planning of dental public health services. The CPITN is a useful approach to screening population because it uses accepted clinical criteria, partial mouth scoring and a simple recording procedure, which permits rapid assessment of individuals for periodontal conditions related to treatment needs.

The percentage of periodontal disease status as well as treatment needs increased with increasing age in population, which is similar as reported by Joshi NV⁽⁸⁾ and Satendra S et al.⁽⁹⁾ This may be due to lack of dental health care facilities, awareness, motivation, dental health education and low socioeconomic status among the rural population.⁽¹⁰⁾ With regards to age, the prevalence and severity of the periodontal

disease increased with age in rural population and same findings were observed in the studies by Joshi NV⁽⁸⁾, Freitas E⁽¹¹⁾, Markkanen H⁽¹²⁾, Plancak D⁽¹³⁾, Mellingen JT⁽¹⁴⁾ and Bader JD⁽¹⁵⁾. A strong correlation with age probably reflects cumulative effects of disease rather than diminishing resistance of older people. The effect might be due to prolonged exposure of periodontium to pathogenic factors in bacterial deposits.^(10,16)

Providing periodontal care (scaling/surgery) for such large population would put huge burden on the health care system. Therefore, a community based approach for general promotion of good oral hygiene practices should be carried out on large scales for control and prevention of periodontal disease.⁽¹⁷⁾

If population is made aware of various oral hygiene measures, the treatment needs could be reduced considerably.

The present study suggests that there is higher treatment needs in the rural population. So, more dental awareness camps should be organized in the villages to decrease the treatment needs and finally the burden on dental health sector.

References

1. Van der Velden U: The onset age of periodontal destruction. *J Clin Periodontol*. 1991 Jul; 18(6):380-83
2. WHO: Technical report series no. 621 (epidemiology, etiology and prevention of periodontal disease), world health organization, Geneva-1978
3. Mistry K.M. The changing pattern of oral disease in India. The need for preventive approach. *J Indian Dent Assoc*. 1983 Oct; 55(10):387-93
4. Ainamo J : The Community index for Treatment needs (CPITN) procedure for population groups and individuals. *Int Dent J*. 1987 Dec;37(4):222-33.
5. Ainamo J, Tervonen T, and Ainamo A. CPITN-assessment of periodontal treatment needs among adults in Ostrobothnia, Finland. *Community Dent Health*. 1986 Jun;3(2):153-61
6. Aggeryd T. Goals for oral health in the year 2000: Cooperation between WHO, FDI and the national dental associations. *Int Dent J*. 1983 Mar;33(1):55-9
7. FDI Global oral health planning work shop- report 2003 April (chapter-1)
8. Joshi NV, Marawar RP. Periodontal health status of rural population of Ahmednagar dist, Maharashtra using CPITN indexing system. *JISP* 2004;7(2):115-18
9. Periodontal health status of rural and urban population of Aligarh district of Uttar Pradesh state. *JISP* 2005;9(2):86-90
10. Ashraf-Sadat Sanei, Alireza Nikbakht-Nasrabadi. Periodontal health status and treatment needs in Iranian adolescent population. *Arch Iranian Med* 2005;8(4):290-94
11. Freitas E, Meyer K, Davis RK, Kristoffersen T. A baseline study of periodontal conditions among youths and adults in Portugal. *Community Dent Oral Epidemiol* 1983;11:250-4
12. Markkanen H. Periodontal treatment need in a Finnish industrial population. *Community Dent. Oral Epidemiol* 1978;6:240-4
13. Plancak D, Aurer- Kozelj J. CPITN assessment of periodontal treatment needs in the population of Zagreb, Croatia. *Int Dent J*. 1992;42:441-4
14. Mellingen JT, Lie T. Periodontal awareness, health, and treatment need in dental school patients. *Acta Odontol Scand* 1991;49:103-8
15. Bader JD, Rozier RG, McFall WT, Ramsey DL. Periodontal status and treatment needs among regular dental patients. *Int Dent J*. 1988;38:255-60
16. J.E. Frencken, G.J. Truin, M.A. Von't Hot, K.G. Konig, B.S. Lembariti, J. Mulder, H. Kalsbeek. Plaque, calculus, gingival bleeding and type of tooth cleaning device in a Tanzanian child population in 1984,1986 and 1988. *J. Clin Periodontol* 1991;18(8):592-97
17. Pal T.K.et al: Periodontal health status or rural population of West Bengal using CPITN indexing system. *JISP* 1998;1(1):23-5

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