



Dental Health and Treatment Needs Among Children in a Tribal Community

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ABSTRACT

Objective: To assess the dental health status and treatment needs among children of 'Pardhi' tribal community.

Methods: A total of 185 children were examined over a period of 2 months using WHO proforma. The statistical software namely SPSS version 15.0 and data was analyzed using Student's t-test and ANOVA test at $p < 0.05$.

Results: The mean score for dft and DMFT was 1.87 ± 1.073 and 2.04 ± 1.564 respectively with males subjects were having comparatively more scores. It was also found significant differences between age groups. Most of the children needed one surface filling, i.e. 29.40%, followed by pulp care and restoration (19.30%), two or more surface fillings (15.60%) and extraction (11.70%).

Clinical significance: The study subjects were characterized by a lack of dental care services, high prevalence of dental caries and treatment needs. Therefore, implementation of a basic oral health care program for this tribal population is a high priority.

Keywords: Dental caries, Treatment needs, Children, Tribes.

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INTRODUCTION

Health is a valuable asset not only for an individual, but also for the social system. A nation may progress more rapidly when the population are healthier and lead a productive life.¹ Oral health is now recognized as equally important in relation to general health. Various factors like nutritional status, tobacco smoking, alcohol, hygiene, stress, etc. are linked to a wide range of oral diseases forming the fundamental basis of the common risk factor approach to prevent the oral diseases.²

The health of the mouth and surrounding craniofacial structures is integral to an individual's total health throughout his or her life. Oral and craniofacial conditions include dental caries, periodontal diseases, cleft lip and palate, orofacial pain and cancers.³

In India there are many communities which are backward in terms of social, economic, political and educational considerations. Tribal community of India is one among them. A tribe is defined as a 'collection of families bearing a common name, speaking a common dialect, occupying or professing to occupy a common territory and is not usually endogamous though originally it might have been so.'⁴ Due to multidimensional factors, these people specially face many problems including illiteracy, difficult terrain, isolation, superstitions and inadequate health facilities.⁵

Tribal people constitute 8.3% of the nation's total population, over 84 million people according to the 2001 census. Pardhi are the most backward tribe of Southern India. They are facing common habit of chewing catchew or katha (commonly used for betel leaves and other medicinal purposes) which is also commonly seen in children.⁶

There have been very few studies among tribal population in younger age till now. Therefore, this study aims to assess the oral health status and treatment needs among children of 'Pardhi' tribal community residing in Ahmednagar district, India.

METHODS

After obtaining official permission from the Institute this study was planned among children of Pardhi tribes in India. The total tribal population was 1,780 including 907 males and 873 females. The study sample, i.e. 185 was selected using cluster random sampling technique. Further they were categorized according to gender (males 102, females 83)

and age groups as 5 to 8, 9 to 12 and 13 to 16 years. Those who were belonging to the locality and willing to participate in the survey were included.

The survey proforma was prepared with the help of a self-administered structured questionnaire written in English pretested through pilot survey to collect the information about the demographic details, oral hygiene practices and dental status was examined using WHO oral health assessment form.⁷ The intraexaminer reliability was assessed during pilot survey using weighted Kappa statistics, that was 88% for DMFT.

The dental status of subjects was checked by WHO oral health survey basic methods 1997 by using community periodontal index (CPI) probe and plane mouth mirror (Type III clinical examination). Proper sterilization was maintained in the examination area.

STATISTICAL ANALYSIS

The statistical software namely SPSS version 15.0 was used for the analysis of the data. Quantitative values were compared using t-test and ANOVA to assess level of dental caries. The p-value of 0.05 or less was considered as statistically significant.

RESULTS

The study population comprised of 185 children from the Pardhi tribal community. Among the subjects, 52

(28.1%) were from 5 to 8 years age group, 76 (41.1%) and 57 (30.8%) belongs to 9 to 12 and 13 to 16 years respectively (Table 1).

In primary dentition, overall mean number of decayed teeth (dt) and dft was same, i.e. 1.87 ± 1.073 due to missing of ft component. It was also found significant differences between age groups (Table 2). According to gender, it was observed that males had higher values for dft (2.86 ± 1.098) which was statistically significant (Table 3).

Regarding permanent teeth, overall mean number of decayed teeth (DT) was found to be 1.93 ± 1.351 , that of missing teeth (MT) was 0.11 ± 0.235 and overall mean DMFT of the study population was 2.04 ± 1.564 . Similarly according to gender, males had significantly higher values for overall DMFT (1.46 ± 1.026) than their counterparts (Table 3). According to age groups, there was significant increase in DMFT scores with increasing age as shown in Table 2.

The study revealed that most of the children needed one surface filling, i.e. 29.40%, 15.60% subjects needed two or more surface fillings, 19.30% required pulp care and restoration and 11.70% required extraction. Whereas few subjects required treatments like fissure sealant, crowns and other procedures like fixed or removable prosthesis (Graph 1).

DISCUSSION

Dental health in tribal communities, particularly in remote areas, is affected by factors that include tobacco use, cultural

Table 1: Distribution of study population by gender and age

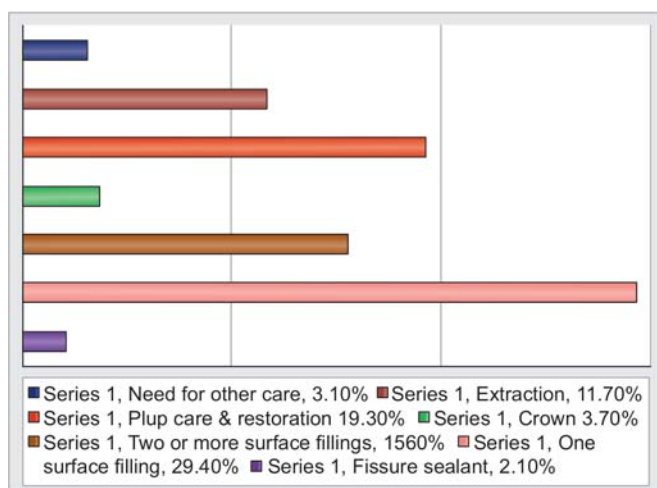
Age	Male		Female		Total	
	No.	%	No.	%	No.	%
5-8 years	28	27.5%	24	28.9%	52	28.1%
9-12 years	44	43.1%	32	38.5%	76	41.1%
13-16 years	30	29.4%	27	32.6%	57	30.8%
Total	102	100%	83	100%	185	100%

Table 2: Mean scores of dt/DT, MT, ft/FT and dft/DMFT according to age groups using ANOVA test

Characteristic	dt	ft	dft	DT	MT	FT	DMFT
Age	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
5-8 years	2.98 (2.042)	0.00 (0.000)	2.98 (1.042)	0.08 (0.095)	0.00 (0.000)	0.00 (0.000)	0.08 (0.095)
9-12 years	1.52 (1.61)	0.00 (0.000)	1.52 (0.61)	1.35 (1.484)	0.00 (0.000)	0.00 (0.000)	1.35 (1.984)
13-16 years	0.00 (0.000)	0.00 (0.000)	0.00 (0.000)	2.16 (1.654)	0.48 (0.454)	0.00 (0.000)	2.64 (1.328)
Total	1.87 (1.073)	0.00 (0.000)	1.87 (1.073)	1.93 (1.351)	0.11 (0.235)	0.00 (0.000)	2.04 (1.564)
F-value	5.323	-	4.754	3.764	13.752	-	4.6532
p-value	0.001*	-	0.001*	0.046*	0.000*	-	0.001*

Table 3: Showing mean scores of dt/DT, MT, ft/FT and dft/DMFT according to gender using Student's t-test

Characteristic	dt	ft	dft	DT	MT	FT	DMFT
Gender	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Male	2.86 (1.098)	0.00 (0.000)	2.86 (1.098)	1.34 (1.284)	0.13 (0.638)	0.00 (0.000)	1.47 (1.002)
Female	1.75 (0.782)	0.00 (0.000)	1.75 (0.782)	1.06 (0.792)	0.40 (0.725)	0.00 (0.000)	1.46 (1.026)
p-value	0.041*	-	0.041*	0.048*	0.071**	-	0.631*



Graph 1: The study population according to treatment needs

practices, the cost and availability of oral hygiene aids, and the availability of dental healthcare services.

In the present study, mean dft and DMFT among Kolghas was 1.87 ± 1.073 and 2.04 ± 1.564 respectively which was lower compared to study conducted by Bali RK et al (2004)⁸ among general population of India. It could be due to no prevalence of filled tooth among children. This finding was similar to the studies conducted by Bhat M (2007)⁹ and Kumar TS et al (2009).¹⁰ This showed their complete unawareness about the existence of dental treatment.

However, the present findings were higher than Naidu et al (2006)¹¹ in which mean DMFT was 0.61, Sullivan et al (1997)¹² among orphan children of Romanian showed mean DMFT as 0 and Adekoya Sofowora (2006)¹³ found mean DMFT of 0.14. This may be due to tendency of eating when hungry rather than following a habit of three meals a day along with improper oral hygiene practices and lack of using fluoridated toothpaste among children.

According to age groups, mean dft of 2.98 ± 1.042 was seen among youngest age group (5 – 8 years) which was low compared to studies conducted by Bhat M (2007)⁹ for Indian fisher folk community children (mean DMFT = 5.09) and Sampaio et al (2010)¹⁴ for children from Potiguara Indian reservation in Brazil (mean DMFT = 5.87).

Regarding gender, males (mean dft 2.86 ± 1.098 and DMFT 1.47 ± 1.002) had significantly higher caries than females which in contrast to the findings reported by Olsson B (1979)¹⁵ among privileged children in which 13 to 14-year-old boys had mean DMFT 3 and girls had mean DMFT 3.68 respectively. This could be probably due to attitude of females as they are more meticulous about maintaining cleanliness and hygiene.

One of the striking features of the present study is that none of the subjects had a filled tooth. This finding is similar to the studies conducted by Kumar TS et al¹⁰ and Bhat M.¹⁶

This shows their complete unawareness about the existence of dental treatment.

High prevalence of treatment needs was found among children. The most required treatment was one surface filling (29.40%) followed by pulp care and restoration (19.3%). These findings were similar to the studies conducted by Bhat M (2008);¹⁶ Honkala E et al (1996)¹⁷ and Mosha HJ et al (1994).¹⁸ There may be number of factors contributing to large unmet treatment needs among this community, such as lack of availabilities of dental health care services, motivation by caretakers, low priority given to dental care in society and finally cost of the treatment.

CONCLUSION

The population examined is characterized by high prevalence of dental caries as well as unmet treatment needs. There may be number of factors regarding these problems as poverty, illiteracy, poor awareness and lack of oral health services. To improve the oral health status of children, oral health has to be delivered by dental health care providers and also identification of dental problems among this special group. Implementation of such strategy will require co-operation between local people, dental professionals and the government.

REFERENCES

1. Sharda AJ, Shetty S. Relationship of periodontal status and dental caries status with oral health knowledge, attitude and behavior among professional students in India. *Int J Oral Sci* 2009; 1(4):196-206.
2. Sheiham A, Watt RG. The common risk factor approach: a rational basis for promoting oral health. *Community Dent Oral Epidemiol* 2000;28(6):399-406.
3. Oral Health. Healthy people 2010. Midcourse review. Available from <http://www.healthypeople.gov/data/midcourse/html/default.htm>.
4. Nazer M. A Study of Land Alienation and Indebtedness among Tribals in Tamil Nadu, Kerala and Karnataka states. Planning Commission, Government of India, New Delhi 1997-2002:1-44.
5. Kerketta AS, Bulliyya G, Babu BV, Mohapatra SS, Nayak RN. Health status of the elderly population among four primitive tribes of Orissa, India: a clinicoepidemiological study. *Z Gerontol Geriat* 2009;42:53-59.
6. Directorate of Census Operations: Census Report. Central Government of India, 2001, [Constitution of India; Articles 342 (1), (2)].
7. Oral Health Surveys, Basic methods. 4th ed. World Health Organization, Geneva, 1997.
8. Bali RK, Mathur VB, Talwar PP, Chanana HB. National Oral Health Survey and Fluoride Mapping 2002-2003 India. Dental Council of India and Ministry of Health and Family Welfare (Government of India) 2004.
9. Bhat M, Nagesh L, Ankola A. Dental caries status and treatment needs of children of Fisher folk communities, residing in the coastal areas of Karnataka region, South India. *West Indian Med J* 2007; 56(1):96-98.

10. Kumar TS, Dagli RJ, Mathur A, Jain M, Balasubramanyam G, Prabu D, Kulkarni S. Oral health status and practices of dentate Bhil adult tribes of Southern Rajasthan, India. *Int Dent J* 2009;5(3):133-140.
11. Naidu R, Prevatt I, Simeon D. The oral health and treatment needs of schoolchildren in Trinidad and Tobago: Findings of a national survey. *Int J Paed Dent* 2006;16:412-418.
12. O'Sullivan EA, Stephen AJ. The oral and dental status of children residing in Romanian Orphanage. *Int J Ped Dent* 1997;7:41-42.
13. Adekoya-Sofowora CA, Nasir WO, Oginni AO, Taiwo M. Dental caries in 12-year-old suburban Nigerian school children. *J African Health Science* 2006;6(3):145-150.
14. Sampaio FC, Freitas CHSM, Cabral MBF, Machado ATAB. Dental caries and treatment needs among indigenous people of the Potiguara Indian reservation in Brazil. *Rev Panam Salud Publica* 2010;27(4):246-251.
15. Olsson B. Dental health situation in privileged children in Addis Ababa, Ethiopia. *Community Dent Oral Epidemiol* 1979;7(1):37-41.
16. Bhat M. Oral health status and treatment needs of a rural Indian fishing community. *West Indian Medical Journal* 2008;57(4):414-417.
17. Honkala E, Kolmakow S, Sainio P, Vladimir A, Olshevsky and Hurskainen K. Caries experience and treatment need among adults responding to an invitation for dental examination and treatment in two Karelian communities in Russia. *Acta Odontol Scand* 1996;54(3):171-175.
18. Mosha HJ, Ngilisho LAF, Nkwera H, Scheutz F, Poulsen S. Oral health status and treatment needs in different age groups in two regions of Tanzania. *Community Dent Oral Epidemiol* 1994;22(5):307-310.

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