

Evaluation of Oral Health Status among Children of Halba Tribe in Bastar Division of Chhattisgarh, India

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ABSTRACT

Background: The Halba tribe owes its nomenclature term “Hal” which locally means plowing or farming. Bastariya Halba is Dravidian tribe from Warangal. They speak Indo-European language Halbi. There are no population-based studies till date evaluating the oral health status among Halba children in Chhattisgarh.

Aim: To evaluate the oral health status of Halba tribe children in the Bastar division of Chhattisgarh by assessing the prevalence of dental caries and periodontal conditions.

Materials and methods: A cross-sectional study was conducted to determine the dental caries and periodontal status in Halba tribe children. Children aged between 6 and 12 years ($N = 1,050$) were randomly selected from Halba community of Chhattisgarh. Dental caries status was recorded by using the decayed missing filled teeth (DMFT/dmft) index and papillary marginal attached (PMA) index for periodontal status.

Statistical analysis: The statistical software namely Statistical Package for the Social Sciences (SPSS) version 17.0 was used for the analysis of the data.

Results: The study population was 1,050 children from the Halba tribal community. Among the subjects, 545 (51.9%) were boys and 505 (48.1%) were girls. The overall mean dmft/DMFT was found to be 2.25 ± 2.71 . In this study, boys had significantly higher values for overall dmft/DMFT (2.55 ± 2.74) than girls. It was observed that mild, moderate, and severe gingivitis significantly increased with increasing age.

Conclusion: The population examined was characterized by high prevalence of dental caries as well as unmet treatment needs. Factors like poverty, illiteracy, poor awareness, and lack of oral health services may be a reason for poor oral health in these children.

Keywords: Dental caries, Halba tribe, Oral health.

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INTRODUCTION

Good health encompasses variable components including complete oral health other than just healthy teeth. India is among many other underprivileged communities where problems regarding oral health are still persistent instead of all the advancements in the field of dentistry.¹⁻³

The definition of a tribe is a collection of families bearing a common name, speaking a common dialect, occupying or professing to occupy a common territory, and is not endogamous through; though originally it might have been so.⁴ In the bucolic lands of Chhattisgarh, there is a popular tribe named Halba. They are well distributed throughout Chhattisgarh, Madhya Pradesh, some parts of Maharashtra, and Odisha. Durg, Bastar, and Raipur are parts of Chhattisgarh that are inhabited by the Halba tribe. The Halba tribes of Chhattisgarh and Andhra Pradesh resemble each other's characteristics closely.⁵

The “Hal” in Halba means farming from which it gets its name. Bastariya Halba is a Dravidian tribe from Warangal.⁶ The Halba's are mostly involved in primary sectors such as farming and cattle rearing according to RV Russell. They are a mixed caste of Hindus and Gonds and are descendants of housekeepers of Odiya kings. Traditional cultures such as their clothing and the regional dialect, which has pronounced traces of Odiya, Marathi, and Chhattisgariya, a unique characteristic of the Halba tribes. They speak Indo-European language Halbi.⁵⁻⁷

Evaluation of oral health among the children of Halbi tribe has never been conducted based on their population in Chhattisgarh. There are too many variables such as segregation, literacy,

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geography, superstitions, and poor medical services. This study attempts to gain information about oral health status and practices in Halbi children as there are no records of previous studies. Hence, the aim of the study is to evaluate the oral health of Halbi children in Bastar region for the prevalence of dental caries and periodontal diseases.

MATERIALS AND METHODS

A cross-sectional descriptive study was conducted to determine the dental caries and periodontal status in Halba tribal children

of Bastar, Chhattisgarh. Proper ethical approval was sought from the Institutional Ethics Committee before the start of the project. A random selection of children between ages 6 and 12 years ($N = 1,050$) from the Halba community of Chhattisgarh was done. Normal healthy children whose parents had given consent were included in the study. Children with any known systemic disease or mental illness were excluded. A proforma was exclusively designed for the survey for procurement of information. The efficacy of proforma was evaluated by conducting a pilot study, suitable modification was done, and redesigned proforma was used for the study. Prior permission to conduct the study was obtained from the head of the tribal group. Further, they were categorized according to gender (boys 545, girls 505) and divided into two different age-groups 6–8 and 9–12 years, respectively. According to the WHO's guideline for epidemiological surveys in oral health, a well-trained and calibrated examiner executed all the oral inspections.⁸ The children were seated on a chair and oral cavity was examined under artificial illumination, maintaining asepsis condition. For this study, the decayed missing filled teeth (DMFT/dmft) index was used to evaluate dental caries and papillary marginal attached (PMA) index for gingival inflammation. The PMA index records inflammation of the buccal surface of the gingiva which is divided into papillary and marginal gingiva scored as 0–5 depending on the severity and 0–3 in attached gingiva. The dental caries status was checked by using No. 23 Explorer and mouth mirror. A community periodontal index probe was used to check the periodontal status. The data thus obtained was subjected to statistical analysis using Statistical Package for the Social Sciences (SPSS) software version "20" (IBM SPSS Statistics, IBM corp., 2011) for Windows. Descriptive

statistics, that is, mean and standard deviation were calculated and quantitative values were evaluated using Student's *t*-test and Chi-squared test.

RESULTS

The data was collected from 1,050 children from the Halba tribal community. There were 545 (51.9%) boys and 505 (48.1%) girls involved in the study. The overall mean number of decayed teeth (dt/DT) and dmft/DMFT was the same, that is, 2.25 ± 2.71 due to the absence of missing teeth (mt/MT) and filled teeth (ft/FT) component. In this study, boys had significantly higher values for overall dmft/DMFT (2.55 ± 2.74) than girls (Table 1). There was a noteworthy decrease in dmft/DMFT scores with growing age as shown in Table 2. The "*p*" value for gender-wise comparison was insignificant when compared with gingivitis (mild, moderate, and severe) among the boys and girls involved in this study (Table 3). There was mild, moderate, and severe gingivitis in different age-groups which significantly increased with increasing age (Table 4).

DISCUSSION

Cultural practices, taboos, availability of medical and dental services, finances, etc., are different factors that affect the dental health of the tribal population.⁴ The areas where the tribal communities reside are located remotely and are underdeveloped. The communities are isolated and have inadequate communication facilities between each other and the rest of the world as they are located in inhospitable terrains such as forests along hill streams.^{8–11} Poor literacy rate, finances, and inaccessibility make healthcare program

Table 1: Sex-wise comparison of mean dmft/DMFT value

S. no.	Sex	Subjects n (%)	dmft/DMFT (mean ± SD)	t-value	p-value
1.	Male	545 (51.9%)	2.55 ± 2.74	3.25	0.008 ($p < 0.05$) statistically significant
2.	Female	505 (48.1%)	1.95 ± 2.51		
3.	Total	1,050 (100%)	2.25 ± 2.71		

Table 2: Age-wise comparison of mean dmft/DMFT value

S. no.	Age-groups (year)	Subjects n (%)	dmft/DMFT (mean ± SD)	t-value	p-value
1.	6–8	519 (49.4%)	2.58 ± 2.96	3.19	0.001 ($p < 0.05$) statistically significant
2.	9–12	531 (50.6%)	1.93 ± 2.40		
3.	Total	1,050 (100%)	2.25 ± 2.71		

Table 3: Sex-wise comparison of severity of gingivitis (PMA index); Chi-square value = 1.55, df = 3, $p = 0.669$ ($p > 0.05$, nonsignificant)

Age-groups (year)	Normal n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Total n (%)
Male	194 (37.4%)	203 (39.1%)	109 (21%)	13 (2.5%)	519 (100%)
Female	182 (34.3%)	224 (42.2%)	114 (21.5%)	11 (2.07%)	531 (100%)
Total	376 (35.8%)	427 (40.7%)	223 (21.2%)	24 (2.28%)	1,050 (100%)

Table 4: Age-group-wise comparison of severity of gingivitis (PMA index); Chi-square value = 16.6, df = 3, $p = 0.001$ ($p < 0.05$, significant)

Age-groups (year)	Normal n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Total n (%)
6–8	217 (41.8%)	192 (37%)	101 (19.5%)	9 (1.73%)	519 (100%)
9–12	159 (29.9%)	235 (44.3%)	122 (23%)	15 (2.8%)	531 (100%)
Total	376 (35.8%)	427 (40.7%)	223 (21.2%)	24 (2.28%)	1,050 (100%)

implementation difficult. The prevalence of diseases is significantly higher among the population due to a lack of medical and dental facilities.⁹

In this study, the study population was 1,050 children from the Halba tribal community. There were 545 (51.9%) boys and 505 (48.1%) girls involved in the study (Table 1). The overall mean number of dmft/DMFT was 2.25 ± 2.71 , which was considerably higher than the mean DMFT (value 0.61) in the study by Soni et al.⁵ In their study showed that in the 6–8-year age-group, the DMFT was 2.54 which was similar to our study (2.58 ± 2.96) for this age-group. In their study, the caries prevalence and severity of 12-year age-group children was low but was high for children aged 6–8 years. But in our study, it was seen that the dental caries prevalence for the 6–8 years age-group was found to be 52.2% with a mean DMFT of 2.58 ± 2.96 , in the 9–12 years age-group the dental caries prevalence was 45.6% with the mean dmft/DMFT of 1.93 ± 2.40 .

Vaish¹⁰ in his study, showed that in the age-group of 6–8 years, the caries prevalence was 47.7% and 44.3% in 9–11 years, respectively. In our study, caries prevalence in 6–8 years and 9–12 age-groups was 52.2 and 45.6% respectively. Chu et al.¹² in their study showed that caries experience, in 6-year-old children, was found to be 3.3. The findings of our study are much higher than their study. Jalili et al.¹³ showed that in 6–12 years age-group the prevalence of dental caries was 6–17% with mean DMFT ranging between 0.5 and 1.4. These findings are also lower than our study. In this study, the incidence of caries among girls was significantly lower than boys. This was analogous to observations made by Nagaraja et al.,¹⁴ Sahoo et al.¹⁵ and Rao et al.¹⁶ This was also similar to the study done by Dasar,¹⁷ but in his study, it was seen that the mean dmft/DMFT score was 21.23% for the age-group 6–10 years which was found to be 1.92, which is relatively lower than our study with caries prevalence of 48.9% with the overall mean dmft/DMFT of 2.25 ± 2.71 for our entire study population. The absence of filled teeth in the population is one of the striking features of the present study. The data obtained is comparable to the studies conducted by Viragi et al.,⁴ Kumar et al.,¹⁸ and Bhat.¹⁹

In this research, it was noted that gender played no role in gingivitis in each group. The “*p*” value for gender-wise comparison was insignificant when gingivitis (mild, moderate, and severe) was evaluated among boys and girls (Table 4). A similar result was found in the study done by Mandal et al. on children of Santhal tribe in West Bengal. But when compared within different age-group in the present study, it was observed that with increasing age there was a significant increase in mild, moderate, and severe gingivitis which was the opposite in the study done by Mandal et al.²⁰

CONCLUSION

Unmet treatment needs and the high prevalence of dental caries are important characteristics of the given population. Poor economic status and literacy rate, inadequate health services, and lack of information and awareness are factors responsible for the same.

Identification of specific dental health problems and providing oral health care to the special groups will help in improving the dental and overall health of the children. Cooperation from the locals and support from the government are the key factors that a dental professional would require for the implementation of strategies to reach the dental and oral health care needs of the tribal population.

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