

Assessment of Oral Health Status of Tribal Students in Nashik District of Maharashtra State

Anuradha Swayamprakash Gadekar, Ghanshyam Tulshiram Kedar¹

President, Swapnapoorti Educational and Social Welfare Society, Nashik, ¹Department of Zoology, Government of Maharashtra's Ismail Yusuf College, Mumbai, Maharashtra, India

Abstract

Background: Oral health is a state of well being and is essential to an individual's general health and quality of life. "Tribal" are the indigenous native people living in isolation in natural and unpolluted surroundings with their traditional values, customs and beliefs. The tribal constitute a substantial indigenous minority of the population in India, comprising of 9.01% of the nation's total population. The data on the Oral health status of students residing in tribal Dindori Taluka of Nashik District of Maharashtra State is still unrevealed. Hence, the present study was undertaken with the objective to provide baseline data about oral health status of students from the school and colleges of tribal Talukas from Nashik District of Maharashtra State in India. **Aim:** To provide baseline data about oral health status of students from the school and colleges of tribal Talukas from Nashik District of Maharashtra State in India. **Methodology:** The survey was carried out mostly on Second and Fourth Saturday by visiting the schools and Colleges from March 2018 to August 2019. The data was collected by personal examination of each student by using oral diagnostic instruments such as mouth mirror and probe. After visual examination, record of systematic observation and oral hygiene status was noted in participant's observation note. Consent from the principal/headmaster of the concerned college/school was taken, and the survey was done with their prior permission. **Results:** Out of total 1530 participants, oral hygiene status of 1263 (82.54 %) students was found to be affected while only 267 (17.46%) were found to be healthy. Affected participants were characterised by symptoms of ulcers, sores or tender areas in the mouth, bleeding or swollen gums, pain or toothache, bad breathing, calculus, pain with chewing or biting cracked or broken teeth and loss of attachment. Affected participants were characterised by symptoms of ulcers, sores or tender areas in the mouth, bleeding or swollen gums, pain or toothache due to dental caries, bad breathing, calculus, stain, pain with chewing or biting, cracked or broken teeth, loss of attachment and dental caries and facets. Affected participants required dental treatment like restoration of cavities in deciduous and/or permanent teeth, root canal treatment of permanent teeth, pulpotomy or pulpectomy of deciduous teeth, scaling, extraction of non restorable teeth and extraction of over retained deciduous teeth. **Conclusion:** Tribal students of dindori taluka in nashik district of maharashtra state were characterized by the lack of awareness about oral health, periodontal disease, dental caries and lack of dental care, high treatment needs and limited access to oral health services. Hence it is recommended to focus on improving the oral health status and treatment needs of this tribal students.

Key words: Affected students, age group, baseline data, gender, oral hygiene status, tribal area

INTRODUCTION

Oral health is a functional, structural, esthetic, physiologic, and psychological state of well-being and is essential to an individual's general health and quality of life.^[1] There are people still living in isolation in natural and unpolluted surroundings with their traditional values, customs, and beliefs. They are commonly known as "tribals" and are considered

Address for correspondence: Dr. Ghanshyam Tulshiram Kedar, Department of Zoology, Government of Maharashtra's Ismail Yusuf College, Jogeshwari, Mumbai - 400 060, Maharashtra, India. E-mail: gtkedar@rediffmail.com

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to be the indigenous native people of the land.^[2] The tribals constitute a substantial indigenous minority of the population in India, comprising 9.01% of the nation's total population, according to 2011 census data. About 82% of the total tribal population is concentrated in Central and Western parts of the country, whereas only 11% is dispersed in small pockets in the Southern states.^[3]

Despite the remarkable achievements in recent decades, millions of people worldwide have been excluded from the benefits of socioeconomic development and the scientific advances that have improved health care and quality of life. Inequalities in oral health persist worldwide, with mainly affected being the deprived population such as the tribals. Assessment of the oral health status and associated behaviors is an essential part of the process of planning appropriate and acceptable health services and dental health education programs in order to improve the dental health status of this population. Hence, an integrated multidisciplinary approach is required to study the tribal health problems.

The data on the oral health status of students residing in tribal Dindori taluka of Nashik district of Maharashtra state are still

unrevealed. Hence, the present study was undertaken with the objective to provide baseline data about oral health status of students from the school and colleges of tribal talukas from Nashik district of Maharashtra state in India.

MATERIALS AND METHODS

Swapnapoorti Educational and Social Welfare Society, Nashik, is a nongovernment organization (NGO) (Registration No. F-18444/NA)^[4] perusing the oral health of tribal in Nashik district of Maharashtra state. To reveal the oral hygiene of tribal students residing in Dindori taluka of Nashik district, oral hygiene checkup camps were organized by the society.

Consent from the principal/headmaster of the concerned college/school was taken, and the survey was done with their prior permission.

Oral hygiene checkup of tribal students was conducted during the period of March 2018 to August 2019 in eight schools and colleges in tribal Dindori taluka (20°12'00"N 73°49'59"E) of Nashik district of Maharashtra state [Table 1].

Table 1: Details of oral hygiene checkup camps

Date of checkup	Name and address of school/college/orphanage	Number of students examined				Total
		Group A (age - 6-11 years)		Group B (age - 12-18 years)		
		Male	Female	Male	Female	
March 10, 2018	Z.P. Primary School, Chachadgaon Taluk, Dindori District, Nashik (M.S)	60	50	-	-	110
March 24, 2018	Z.P. Primary School, Chachadgaon Taluk, Dindori District, Nashik (M.S)	9	9	19	13	50
May 01, 2018	Smt. Garda Orphanage, Trimbakeshwar Taluk, Trimbakeshwar District, Nashik (M.S)	3	9	-	7	19
July 28, 2018	Janata Seva Mandal High School, Chachadgaon Taluk, Dindori District, Nashik (M.S)	21	9	37	46	113
August 11, 2018	Janata Seva Mandal High School, Chachadgaon Taluk, Dindori District, Nashik (M.S)	-	-	67	82	149
September 08, 2018	Janata Seva Mandal Junior College, Chachadgaon Taluk, Dindori District, Nashik (M.S)	-	-	28	34	62
September 29, 2018	Thakkar Bappa Ashram School, Ambegaon Taluk, Dindori District, Nashik (M.S)	71	55	-	-	126
October 06, 2018	Thakkar Bappa Ashram School, Ambegaon Taluk, Dindori District, Nashik (M.S)	18	16	41	52	127
October 27, 2018	Thakkar Bappa Ashram School, Ambegaon Taluk, Dindori District, Nashik (M.S)	-	-	90	95	185
December 22, 2018	Z.P. Primary School, Nalegaon Taluk, Dindori District, Nashik (M.S)	47	38	-	-	85
January 12, 2019	Govt. Ashram School, Nalegaon Taluk, Dindori District, Nashik (M.S)	-	-	64	54	118
January 19, 2019	Govt. Ashram School, Nalegaon Taluk, Dindori District, Nashik (M.S)	45	49	16	15	125
February 02, 2019	Govt. Ashram School, Nalegaon Taluk, Dindori District, Nashik (M.S)	-	-	53	77	130
February 09, 2019	Z.P. Primary School, Songaon Taluk, Dindori District, Nashik (M.S)	40	36	-	-	76
August 24, 2019	V.N. Naik Arts and Commerce Junior College, Umrle Taluk, Dindori District, Nashik (M.S)	-	-	24	31	55
	Total number of students examined	314	271	439	506	1530

The survey was carried out mostly on second and fourth Saturdays by visiting the schools and colleges. The data were collected by personal detailed oral examination of each student using oral diagnostic instruments such as mouth mirror, mouth mask, probe (GDC CPITN Probe–WHO Probe Standard PCP 11.5B), torchlight, and disposable examination gloves on an upright chair under adequate natural daylight following the World Health Organization’s Basic Guidelines for Oral Health Surveys (WHO, 1997^[5] and WHO, 2013).^[6] The boiler was used at the campsite to sterilize the oral examination instruments. The examination was carried out to identify dental caries, periodontal diseases, oral precancerous lesions or conditions, malocclusion, and soft-tissue changes.

After visual examination, record of systematic observation and oral hygiene status was noted in participant’s observation note.^[7]

After checkup, each school had a 30-min lecture focusing on proper brushing technique with demonstration on maxillary and mandibular jaw model using toothbrush as well as focusing on diet, visit to a dentist, and traumatic injuries. The session was to emphasize and motivate the students for good oral hygiene. It was addressed in the local language, and most of the schoolchildren in the age group of 6–11 years were given a sample of pedobrush and toothpaste.

Table 2: Gender- and age group-wise analysis of students

Male			Female		
Examined	Affected	Healthy	Examined	Affected	Healthy
Group A (age - 6-11 years)					
60	52	8	50	48	2
9	8	1	9	7	2
3	2	1	9	6	3
21	14	7	9	8	1
71	62	9	55	48	7
18	17	1	16	11	5
47	44	3	38	35	3
45	34	11	49	42	7
40	33	7	36	31	5
314	266	48	271	236	35
Group B (age - 12-18 years)					
19	17	2	13	10	3
37	31	6	7	6	1
67	56	11	46	35	11
28	26	2	82	58	24
41	38	3	34	31	3
90	74	16	52	42	10
64	51	13	95	69	26
16	14	2	54	45	9
53	42	11	15	10	5
24	22	2	77	58	19
			31	26	5
439	371	68	506	390	116

RESULTS

During the study period, 15 oral hygiene checkup camps were organized in 8 schools and colleges of tribal Dindori taluka of Nashik district in Maharashtra state of India. Table 1 describes the date- and school-wise information of the camps conducted. For the sake of convenience, students examined were categorized into two groups such as Group A (age: 6–11 years) and Group B (age: 12–18 years).

Group A

Out of total 1530 participants, 585 (40%) participants belonged to Group A, out of which 314 were male and 271 were female. Out of 314 male participants, oral hygiene status of 266 male participants (84.71%) was found to be affected while oral hygiene status of only 48 participants was found to be healthy. Out of 271 female participants, oral hygiene status of 236 (87.08%) was found to be affected while oral hygiene status of 35 female participants was found to be healthy [Table 2].

Group B

Out of total 1530 participants, 945 (60%) participants belonged to Group B, out of which 439 were male and 506 were female. Out of 439 males, oral hygiene status of 371 (84.51%) was found to be affected while oral hygiene status of only 68 was found to be healthy. Out of 506 female participants, oral hygiene status of 390 (77.07%) was found to be affected while oral hygiene status of 116 female participants was found to be healthy [Table 3].

Both Groups A and B include total 753 male participants, out of which 637 males (84.59%) were examined and their oral hygiene status was found as affected while oral hygiene status of only 116 (15.40%) was found to be healthy.

Both Groups A and B include total 777 female participants, out of which oral hygiene status of 626 females (80.56%) was examined as affected while only 151 females (19.43%) were found to be healthy.

Out of total 1530 participants, oral hygiene status of 1263 (82.54%) students was found to be affected while only 267 (17.46%) was found to be healthy [Table 4]. Each table also contains the gender-wise distribution of the participants.

Affected participants were characterized by symptoms of ulcers, sores or tender areas in the mouth, bleeding or swollen gums, pain or toothache due to dental caries, bad breathing, calculus, stain, pain with chewing or biting, cracked or broken teeth, loss of attachment, and dental caries and facets.

Affected participants required dental treatments such as restoration of cavities in deciduous and/or permanent teeth, root canal treatment of permanent teeth, pulpotomy or pulpectomy of deciduous teeth, scaling, extraction of nonrestorable teeth, and extraction of over-retained deciduous teeth.

Table 3: Gender- and age group-wise percentage of affected students

Total students	Male		Total students	Female	
	Percentage of affected students	Percentage of healthy students		Percentage of affected students	Percentage of healthy students
Group A (age - 6-11 years)					
314	266 (84.72)	48 (15.28)	271	236 (87.08)	35 (12.91)
Group B (age - 12-18 years)					
439	371 (84.51)	68 (15.49)	506	390 (77.07)	116 (22.93)

Table 4: Status of oral hygiene in tribal students of Dindori taluka of Nashik district in MS

Status	Male	Female	Total (%)
Examined students	753	777	1530
Affected students (%)	637 (84.59)	626 (80.56)	1263 (82.54)
Healthy students (%)	116 (15.41)	151 (19.44)	267 (17.46)

DISCUSSION

Inadequate oral care can be detrimental to social and emotional well-being and adversely affect interaction with others.^[8] Poor oral hygiene also increases the risk of infection.^[9] In order to prepare suitable oral health service program, proper assessment of oral health status is crucial.

During the study period, 15 oral hygiene checkup camps were organized in 8 schools and colleges of tribal Dindori taluka of Nashik district in Maharashtra state of India. The participants were in the range of age group between 6–11 years (Group A) and 12–18 years (Group B).

Both Groups A and B include total 753 male participants, out of which 637 males (84.59%) were examined and their oral hygiene status was found as affected while oral hygiene status of only 116 (15.40%) was found to be healthy. Out of total 777 female participants, oral hygiene status of 626 females (80.56%) was examined as affected while only 151 females (19.43%) were found to be healthy. Out of total 1530 participants, oral hygiene status of 1263 (82.54%) students was found to be affected while only 267 (17.46%) were found to be healthy. Affected participants were characterized by symptoms of ulcers, sores or tender areas in the mouth, bleeding or swollen gums, pain or toothache due to dental caries, bad breathing, calculus, stain, pain with chewing or biting, cracked or broken teeth, loss of attachment, and dental caries and facets.

In the present study, the high side of affected status might be due to lack of awareness about oral health. Our results are well in agreement with the results observed by authors.^[10-12]

Affected participants required dental treatments such as restoration of cavities in deciduous and/or permanent teeth, root canal treatment of permanent teeth, pulpotomy or pulpectomy of deciduous teeth, scaling, extraction of nonrestorable teeth, and extraction of over-retained deciduous teeth. The reason for

the accumulated treatment needs may be lack of awareness, less importance to tooth, and lack of dental treatment facility nearby. Similar, observations were recorded by Singh *et al.*^[13]

In the present study, it was observed that the prevalence of dental disease was higher in the age group of 6–11 years than the age group of 12–18 years. One of the reasons may be the ignorance of parents on maintenance of oral hygiene of the children due to lack of parental education. A similar observation was found by Prasai Dixit *et al.* in indigenous Chepang schoolchildren of Nepal.^[14]

It was observed that incidence of dental disease among boys and girls was near about similar to a slight difference. In the present study, it was observed that sex difference has no significant role in dental or oral disease in each group.

The study showed that most of the participants had hardly visited the dentist although most of them had dental problems. Our society in its attitude toward dental health has been giving it less importance as compared to general health. Oral health care has been so underprioritized that children do not know just how important oral health is to overall health. There has been a lack of public identification of oral health deterioration and lack of reasonable oral health-care services in the tribal areas.

There is a serious lack of authentic and valid data for assessment of community demands, as well as lack of organized system for monitoring oral health-care services in a tribal area.^[15] A study conducted on oral health status and access to oral health care for US adults aged 18–64 years in 2008 showed that the major reason for not visiting a dentist was affordability.^[16]

The study carried out among the tribal schoolchildren of Nashik district provides baseline data on the oral health status of tribal children which would yield valuable information for planning, implementation, and monitoring of preventive and curative oral health services and help improving the awareness and knowledge of tribal children.

CONCLUSION

Tribal students of Dindori taluka in Nashik district of Maharashtra state were characterized by the lack of awareness about oral health, periodontal disease, dental caries and lack of dental care, high treatment needs, and limited access to oral health services. Hence, it is recommended to focus on improving the oral health status and treatment needs of these tribal students.

The oral health services which were once unaffordable to the underprivileged people in such a tribal area have delivered free of cost through this camp. NGO is not only succeeding in addressing the oral health care in tribal but also is creating greater awareness among them, thus improving lives.

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Conflicts of interest

There are no conflicts of interest.

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