

## Oral Health Knowledge, Attitude And Practices Of Indian Tribal Children

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**Abstract:** Background: The present study aimed to assess the oral health knowledge, attitude and practices of tribal schoolchildren of Gujarat, India. Methods: In this cross-sectional study, a total of 693 tribal schoolchildren were surveyed using a self-administered, structured questionnaire. Children were grouped by age into 3 groups - 1 (3-5 years), 2 (6-9 years) and 3 (10-13 years). Analysis of Variance, Karl Pearson's coefficient of correlation and linear regression analysis were used to assess the relationship between oral health knowledge-attitude (KA) scores and practice (P). Results: KA and P scores were highest for Group 2, followed by Group 3. The differences between scores of Groups 1 and 2, and Groups 1 and 3 were of statistical significance ( $P < 0.05$ ). Pearson correlations between KA and P scores of study population and each study groups were positive indicating P increased with increase in KA. Linear relationship is seen between KA and P, indicating that oral health knowledge and attitude is a significant variable to predict oral health practices ( $P < 0.001$ ). Conclusions: The study concluded that there were deficiencies in the tribal children's knowledge and attitude towards oral health and oral health practices. However, all knowledge was not always converted into practice. [Rajal P NJIRM 2016; 7(5):64-68]

**Keywords:** tribal children, oral health, knowledge and attitude, oral health practice

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**Introduction:** Numerous descriptive, clinical, and health services studies<sup>1-4</sup> make it clear that health behaviour in general, and oral health behaviour in particular are complex phenomena. The oral health concern of an individual is dependent on his/her dental attitude and several studies<sup>2-4</sup> have reported that dental health attitudes become more positive with increasing levels of oral health awareness.

Tribal oral health has been a cause of much concern, tribes more often than not being backward in terms of social, economic, political and educational considerations<sup>5</sup>. Owing to the nature of these factors, tribal people are handicapped by many problems, of which illiteracy, poverty, superstitions and inadequate health facilities are predominant<sup>6</sup>. Therefore, these people are disadvantaged by their limited access to material resources, knowledge base and social conditions.

Studies<sup>7-9</sup> conducted on tribal populations of several countries report low levels of oral hygiene and untreated dental diseases which are linked to their beliefs, knowledge and practices. In the present study we assessed the oral health knowledge, attitude and practices of tribal schoolchildren of Gujarat state in India.

**Methods:** Study population: The study population comprised of 693 school-going tribal children aged between 3 and 13 years from four major tribal districts - Sabarkantha, Panchmahal, Vadodara and Bhavnagar - of Gujarat state in India, the common tribes inhabiting these areas being the Bhil, Rathwa, Koli and Rabari.

Study design: This cross-sectional observational study used a structured questionnaire survey to collect the demographic details and information regarding the oral health knowledge, attitude and practices of the study population.

In the present study, oral health knowledge, attitude and practices were taken as primary data for collection by means of questionnaire survey. A high response rate was obtained because a school-based approach was employed.

The study population was categorized into three age groups - 3 to 5 years (Group 1), 6 to 9 years (Group 2) and 10 to 13 years (Group 3) and the children were given structured questionnaires containing 25 questions in the local language Gujarati designed to assess their oral health knowledge, attitude and practices. The children were instructed to attempt all questions independently and to select any one

response from a list provided with each question. A trained assistant helped children aged 3 to 5 years. For the purpose of analysis each correct answer was given a score of 1 and incorrect and 'do not know' answers were given a score of 0.

1. Oral health knowledge and attitude: The assessment of the participants' oral health knowledge and attitude included 15 questions on the purpose of toothbrushing, reasons for tooth decay, impact of oral health on general health, importance of regular dental visits, effect of gutkha chewing, services provided by a dentist, and their attitude towards general and oral health care.

2. Oral health practice: The assessment of participants' oral health practices included 10 questions on frequency and method of toothbrushing, oral hygiene aids used and utilization of oral health services.

After completion of data collection, the children were given a health talk on oral health maintenance using posters and models.

**Statistical analysis:** Descriptive analysis was done of the data collected using the Statistical Package for Social Sciences software version 17 for Windows (SPSS Inc., Chicago, IL, USA). Analysis of Variance (ANOVA) was used for comparison between groups. Karl Pearson's coefficient of correlation and linear regression analysis were used to estimate the relationship between the oral health knowledge and attitude scores and practice scores of the tribal children. P-values of 0.05 or less, 0.001 or less, and 0.01 or less were considered to be of statistical significance for ANOVA, linear regression analysis and Pearson's coefficient of correlation, respectively.

**Results:** In the present study, 58% children believed that dental caries was caused by worms, 21% thought it occurred due to consumption of sweetened food, whereas 15% believed the reason to be improper brushing. Ninety-seven percent children considered toothbrushing important for avoiding tooth decay. Fifty-four percent believed that the aim of toothbrushing is to prevent tooth decay while 40% thought it kept their teeth clean. Sixty-three percent children favoured the use of toothpaste while 5% preferred toothpowder. About 75% children believed it necessary to brush the teeth before going to bed. Fifty-six percent children were aware that oral health

impacted general health, and 27% that irregularly-placed teeth can be aligned. Seventy-two percent children considered gutkha chewing and smoking bad habits. About 70% children were positive that they cared about their teeth as much as they did about the rest of the body and that decayed teeth affected the appearance. Fifty-one percent children considered a regular visit to the dentist necessary but only 23% were aware of the dentist's role in prevention of dental disease.

Of the children forming the study population, 76% brushed their teeth once, 22% twice and 1% thrice a day whereas 1% claimed to have never cleaned their teeth. Seventy-one percent children reported the use of a toothbrush for cleaning their teeth, 2% used toothpowder, 27% cleaned their teeth with neem or datun sticks and 0.02% used various indigenous oral hygiene aids. Seventeen percent reported having shared their toothbrush/datun stick occasionally with their siblings. Fifty-four percent children used the horizontal method of brushing and 43% used the circular method, while 2% used other methods. Of the children who used a toothbrush as their oral hygiene aid, 41% changed it only when bristles were frayed, 19% every 3 months, 15% every 6 months and 24% every 6-12 months. Sixty-seven percent children cleaned their tongue each time they cleaned their teeth, 26% occasionally and 6% never. Twenty-six percent children took medication when they had a toothache, 38% consulted a dentist, 16% waited for the pain to subside on its own, and 2% brushed their teeth more frequently for pain relief. Of the children who had sought dental treatment, 48% reported following the treatment to complete while 52% stopped as soon as the pain subsided.

In the present study, mean knowledge-attitude (KA) scores ranged from 6 to 13, 2 to 15, and 3 to 15, out of a possible 15 for Groups 1, 2 and 3, respectively. The practice (P) scores ranged from 0 to 7, 0 to 10, and 0 to 10, out of a possible 10 for Groups 1, 2 and 3 respectively. An important observation was that no child in the study population scored full 25 marks for knowledge-attitude and practice. Table 1 presents the mean knowledge-attitude (KA) and practice (P) scores of the study population. Both scores were highest for Group 2, followed by Group 3. The differences between scores of Groups 1 and 2, and of Groups 1 and 3 were of statistical significance (Table 2).

**Table 1: Correlation of mean knowledge-attitude and practice scores of the study population**

Group	KA score (out of 15) - X	P score (out of 10) - Y	Correlation coefficient (r <sub>xy</sub> )
	Mean ± SD		
Group 1(n = 110)	7.96 ± 1.64	2.77 ± 1.65	0.22*
Group 2(n = 196)	9.99 ± 2.45	4.96 ± 2.61	0.51*
Group 3(n = 387)	8.89 ± 2.84	3.84 ± 2.68	0.38*
Total (n = 693)	9.87 ± 2.60	4.37 ± 2.53	0.23*

**Table 2: Inter-group comparison of knowledge-attitude and practice scores of the study population**

group		KA scores	P scores
Group 1	Group 2	< 0.05*	
	Group 3		
Group 2	Group 3	> 0.05**	

One way-ANOVA (Scheffe’s test), \*Significant (P < 0.05), \*\*Not significant

Also presented in Table 1 are Pearson correlations between KA and P scores of the study population as well as each of the study groups. All correlations were positive implying that P increased with increase in KA.

Linear regression analysis showed a linear relationship between KA and P, indicating that oral health knowledge and attitude is a significant variable to predict oral health practices (Table 3).

**Table 3: Linear regression analysis of oral health practices on oral health knowledge and attitude**

Model	Regression (R)	R Square (R <sup>2</sup> )	Adjusted R <sup>2</sup>	Significance P < 0.001
1	0.54 <sup>a</sup>	0.29	0.29	<0.01

a. Predictors: (Constant), KA, \*Significant

**Discussion:** Results of the present study indicate that although the tribal children appeared to be aware of the importance of dental health to some extent and displayed a fairly good attitude towards the same, deficiencies existed in this knowledge. Also, knowledge did not always translate into adequate oral health practices.

A majority of the study population attributed dental caries to worms or germs suggesting that the worm theory in caries etiology prevails significantly among this population. Kadir and Yassin<sup>9</sup> have reported very

similar observations from their study of aborigines of Selangor, West Malaysia.

A large majority of our study population used a toothbrush with toothpaste as their oral hygiene aid, a smaller percentage used neem/meswak stick or other indigenous agents to clean their teeth and a very small percentage did not clean their teeth at all. Kadir and Yassin<sup>9</sup> have observed that more than 62% of their Malaysian population used a toothbrush and about 30% used traditional agents as their oral hygiene aid whereas 8% never cleaned their teeth. Singh et al<sup>8</sup> have observed 100% usage of toothpaste and toothbrush among tribal children from Udupi District, Southern India, whereas Bhasin<sup>6</sup> has reported the use of twigs of Rattanot (*Jatropha curcas*) and Jhatbor (*Ziziphus nummularia*) as oral hygiene aids among tribals in Rajasthan.

Most children in the present study cleaned their teeth at least once a day and very few did not clean their teeth at all. These findings were similar to that of Singh et al<sup>8</sup> who observed that more than 60% of tribal children from Udupi District in Southern India brushed their teeth once daily, with the rest brushing two or more times daily. Kadir and Yassin<sup>9</sup> have observed that 20% of their Malaysian population cleaned their teeth once daily and the rest cleaned their teeth two times or more in a day. Kumar and co-workers<sup>10</sup> have reported that nearly half the tribals from Southern Rajasthan have never cleaned their teeth.

Through the years the tribes have evolved a pattern of beliefs concerning health and diseases. This is evidenced by the fact that several children in our study population admitted to waiting for toothache to subside on its own or to brush their teeth more frequently for relief or to depending upon the pharmacist to prescribe medication for the same. However, a third of those in pain consulted a dentist for treatment. This change in attitude towards utilization of oral healthcare services may be a result of increased communication as well as an increased awareness brought about by education. Kadir and Yassin<sup>9</sup> have reported that 30% of their study population consulted a dentist for treatment while a small number (4%) still went to the pharmacist. However, Singh et al<sup>8</sup> have reported that none of the tribal children in their study population had visited

trained health personnel or a dentist for dental treatment.

In the present study, it was observed that both knowledge-attitude and practice scores were highest for children in the 6-9-year age group. This may have explained by the timing of introduction of oral health education in the school syllabus which corresponds to this age, resulting in increased awareness of and enthusiasm for oral healthcare in children of this age group. Children aged 10-13 years had relatively lower scores which might indicate a shift of interest to other activities common in preadolescent children. Children aged 3-5 years had the least scores which can be attributed to the low levels of knowledge and understanding in younger children.

In the context of oral health, regardless of the amount of knowledge a person already has about healthcare and associated preventive measures, attitudes can always be improved, and these in turn will generate healthier oral health practices. In the present study, it was observed that oral health practices improved with increased oral health knowledge and good oral health attitude, although all knowledge did not translate into practice. Our study also showed that oral health knowledge and attitude can be a definite predictor of oral health practice. Kay and Locker<sup>11</sup> have suggested that although oral health promotion and health education are effective in increasing levels of knowledge and altering attitude and beliefs, this alteration was not related to a change in oral health habits. Honkala<sup>4</sup> has observed a positive relationship between oral health knowledge and attitude and oral hygiene practices among Finnish schoolchildren. Freeman and co-workers<sup>12</sup> have suggested that positive health attitudes could reflect feelings of empowerment and this was conducive to the adoption of self-care practice. Smyth and his colleagues<sup>13</sup> have observed in their study among Spanish children that subjects with knowledge and more positive attitudes have healthier habits.

**Conclusion:** From the present study it can be concluded that there were deficiencies in the tribal children's knowledge of and attitude towards oral health as well as in their oral health practices. Increased knowledge and good attitude led to better oral health practices. However, all knowledge was not always converted into practice.

Oral health education has been an effective tool in increasing levels of knowledge and altering attitudes towards oral health. However, an alteration in knowledge and attitude is not sufficient to bring about a change in oral health habits. It is important to create supportive environments and to strengthen community action. Parents and schoolteachers can be important informants of oral health and their involvement should be considered in planning oral health education for children, with schools serving as platforms. This education must be reinforced from time to time in order to ensure improvement in oral health behaviour.

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