

Comparing the personal oral hygiene practices among Government and Private school children of Mahabubnagar, Telangana state - A cross sectional study

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ABSTRACT

Introduction: Oral health is fundamental to general health and well-being. A healthy mouth enables an individual to talk, eat, and socialize without experiencing active disease, discomfort, or embarrassment. **Objectives:** To assess the knowledge and oral hygiene practices of school children from both Government and Private schools in Mahabubnagar district. **Materials and Methods:** A total of 150 children aged 11–15 years were randomly selected from six Private and six Government schools. A questionnaire related to their personal and oral hygiene practices was distributed to the school children. **Results:** The results of this study showed that most respondents had a good knowledge of basic hygiene measures and positive attitude towards oral hygiene. The students of both schools exhibited poor oral hygiene practices but were significantly reported more in the Government school than in the Private schools ($p < 0.005$). Majority of the respondents (91.3%) used a commercial toothbrush and toothpaste and half of them (50%) reported brushing twice a day. Two-third of the respondents (75%), had never visited a dental clinic. **Conclusion:** The results of the present study showed that the knowledge and oral hygiene practices of Government school children were less satisfactory in some aspects when compared to private school children.

Key words: Knowledge, Oral health, Practice, School children

Oral health is an essential aspect of general health and oral health knowledge is considered to be an important prerequisite for health-related practices. In a study, Carneiro *et al.*[1] explained that there is an association between increased knowledge and better oral health because people who assimilate oral health knowledge most probably have a sense of personal control over their oral health, and they are more likely to adopt self-care practice.

According to Smyth *et al.*,[2] there is a strong evidence between oral health knowledge and oral health practices. Cheah *et al.*[3] also explained that people with positive attitudes towards their oral health are influenced more and they take care of their teeth better as compared to other people.

Foundation for the maintenance of personal hygiene is laid down in childhood. Personal hygiene is the science of healthy living of an individual. The term personal hygiene includes all those factors which influence the health and well-being of an individual [3]. It is a public health tool that is used for disease prevention and health promotion in individuals, families, and communities.

This study provides baseline data for future research and allows comparisons with children's oral health attitudes in other nations. Examining school children knowledge of dental diseases and preventive agents was the focus of this study. Consequently, this study was aimed at comparing personal oral hygiene practices

among school children of Government and Private schools within Mahabubnagar district of Telangana state.

MATERIALS AND METHODS

A cross-sectional descriptive study was conducted among school children (aged 11–15 years) of government and private schools of Mahabubnagar district of Telangana state to assess their knowledge, attitude and practices regarding their oral health status and personal hygiene.

Among 35 secondary schools of Mahabubnagar district, twelve schools were selected (six private and six government) using convenience sampling technique. Six public and six private schools were selected to ensure socio-economic balance in the study population and to reduce research cost. Out of twelve, two schools (one private and one government) were randomly selected. Three classes were selected from each year from each school, and an average of 23 students participated from each class. A total of 150 school children, who were willing to participate and whose parents gave consent included in the study. Students who were not willing to participate or were absent on the day of the study were excluded from the study.

The Sample size was calculated to be 150 students using the formula $n = Z^2pq/d^2$ [4] where: n = the desired sample size, z = the standard normal deviate, set at 1.96 (corresponding

to 95% confidence level), p = the proportion in the target population estimated to have a particular characteristic, taken as 50% (i.e. 0.50), $q=1.0-p$, d = degree of accuracy desired, set at 0.05 (5%).

The study protocol was reviewed by the Ethical Committee of Institutional Review Board and was granted ethical clearance. An official permission was obtained from the District Education Officer, District Education Office (primary and middle; secondary) of Mahabubnagar district. Written consent was obtained from the school authorities and parents of all the study participants.

The first part of proforma consisted of the self-administered structured questionnaire comprising of demographic questions like name, age, sex, school name, mother literacy, and father literacy. There were 22 close-ended multiple-choice specific research questions which were divided into three categories: Knowledge (11 Questions), attitude (3 Questions), and practices (8 Questions).

The questionnaires were distributed to all the students and were collected back after 15 min. The instrument was administered with the help of three dentists working at the S.V.S Institute of Dental Sciences, Mahabubnagar.

Oral epidemiological data was collected by clinical examinations in various schools. The Decay Missing and Filled Teeth index (DMFT Index-WHO, 1987) and the Periodontal disease index (Ramfjord, 1967) were used to determine the prevalence of dental caries and Periodontal disease among the participants. All examiners were trained and calibrated accordingly (WHO standards) before the start of the study.

Data were analyzed using SPSS software version 18. Chi-square test was used for making comparisons. $p<0.005$ was considered as statistically significant.

RESULTS

In the present study, 150 school children were given the Questionnaire; the data was then analyzed and has been tabulated for each Question. Among 150 children, 48.6% were males and 51.4% were females; 48.6% children from Government schools and 51.4% children from private schools. Among total children, only 59.3% have an educated mother and 66% have an educated father (Table 1).

When asked about their hair-washing habits, the results showed that the majority of children (82%) would wash once in a week. Majority of the students (88%) would take bath twice a day, and remaining (9.33%) once in a day. When asked about the material used for bathing, majority of them (75.33%) responded that they were using soap whereas the rest (14%) had used water only. Most children (91.33%) answered about using a toothbrush for cleaning their teeth, 4% of them for twigs, and rest of the 3.33% for other materials. When we asked about using dentifrices for cleaning their teeth, 82% of them answered that they had used toothpaste, 10.67% answered for using tooth powder, while 7.33% answered for other materials for cleaning their teeth (Table 2).

A Comparison was done among Government and Private school children regarding knowledge, attitude, and practices

Table 1: Distribution of children by types of school, gender, parents, educational status

Variables	Study population (%)
Schools	
Government	73 (48.67)
Private	77 (51.33)
Gender	
Male	73 (48.67)
Females	77 (51.33)
Mother educational status	
Educated	89 (59.33)
Un educated	61 (41.67)
Father educational status	
Educated	99 (66)
Un educated	51 (34)

Table 2: Response of students regarding personal oral hygiene practices

Items	Number of children (%)
How frequent do you take head bath	
Every day	27 (18)
Once in a week	123 (82)
Once in a month	0 (0)
Occasionally	0 (0)
How many times do you take bath	
Once in a day	14 (9.33)
Twice in a day	132 (88.00)
Not daily	4 (2.67)
Occasionally	0 (0.00)
What do you use for bathing	
Soap	113 (75.33)
Water only	21 (14)
Others	16 (10.67)
Materials used for cleaning your teeth	
Tooth paste	123 (82)
Tooth powder	16 (10.67)
Neem stick	8 (5.33)
Others	3 (2.00)

(KAP) of oral hygiene, the frequency of hair wash, frequency of taking bath, the material used for cleaning the teeth, washing hands, time at which they brush, the meaning of personal hygiene. There was a statistical difference between Government and Private School children ($p<0.005$) (Table 3).

DISCUSSION

In India, data on oral health and personal behavior of children are not available; henceforth, the present study was conducted to provide information about oral health knowledge, their practices with regard to children aged 11–15 years. Schools provide a platform for the promotion of health and oral health not only for the students but also for the staff, families, and members of

Table 3: Comparative table of Private and Government school children.

Items	Options	Government (%)	Private (%)	Total (%)	Chi-square	p
Frequency of head bath	Every day	30	6.4	18	14.19	0.002
	Once a week	69.86	93.5	82		
Frequency of taking bath	Once daily	17.81	1.3	9.33	17.22	0.002
	Twice daily	76.71	98.7	88		
Materials used for cleaning teeth	Twig	8	0	4	15.01	0.0018
	Toothbrush	82	100	91.3		
	Water only	2.74	0	1.33		
	Others	6.85	0	3.33		
Materials used to clean Teeth	Toothpaste	65.75	97.40	82	25.83	0.001
	Tooth powder	19.18	2.6	10.67		
	Salt	10.96	0	5.33		
	Others	4.11	0	2		
When do you wash hands	Before meals	8.22	28.57	18.67	22.02	0.0002
	After meals	8.22	16.8	12.67		
	After defecation	12.33	0	6		
	After playing	65.75	51.95	58.67		
	All	5.48	2.6	4		
Time at which they brush	Early morning	64.38	83.1	74	30.49	0.0001
	Before bed	31.51	2.6	16.67		
	Above both	1.37	14.29	8		
	After every meal	2.74	0	1.33		
	None	4.11	1.30	2.67		
Meaning of personnel hygiene	Keep yourself clean	21.9	48	35.3	19.52	0.0002
	Keep surrounding clean	13.7	0	6.67		
	Both	60.27	50.6	53.3		
	None	4.11	1.30	2.67		

the community as a whole [5]. A total of 150 subjects belonging to both Private and Government schools were included in the present study.

It was found that the number of female participants was comparatively higher as compared to male participants in both the age groups. The use of a toothbrush is the most important measure for maintaining oral hygiene [5] and poor dental hygiene can result in tooth decay, gingivitis, periodontitis, tooth loss, bad breath (Halitosis), fungal infection, and gum diseases. Although more than 79.33% of the study participants used to brush their teeth once a day, very few participants were brushing their teeth twice daily (20.67%), which is less as compared to results of some other study conducted by Zaborskyte and Bendoraitiene on school children in Lithuania[6] This may be due to the lack of awareness regarding importance of brushing at night, peer-influence or lack of parental and professional education[7] However, number of participants using tree-stick for cleaning their teeth were much higher (59%) in another study conducted by Okemwa as compared to the present study [8].

When asked about the educational level of their parents, it was found that mother's literacy rate was lower than fathers (59% and 66%, respectively). Cheah *et al.* [3] conducted a similar study among secondary school students in Kuching, Sarawak. Although the students had a positive attitude toward dental services, dental attendance was low, mostly due to a fear of needles and

hand-pieces, their knowledge about oral diseases was poor and only 43.5% of the students had a high level of Oral health awareness.

Humagain [9] performed a descriptive cross-sectional study evaluating the KAP about oral health among secondary school level students of rural Nepal. The result showed that only 35.1% of the study participants actually had knowledge of oral hygiene and only 20% reported that they were regular dental attendees for checkups.

Mehta and Kaur [10] assessed the oral health-related knowledge and practices among 12-year-old school children studying in rural areas of Panchkula, India. A low level of knowledge and practices was observed as only 25% of the participants cleaned their mouth more than once a day; 45.5% of the children had some problem with their teeth and/or gums, and only 35.9% visited the dentist for treatment.

The practice of use of toothpaste is now common in the community; however, only 4% of the students knew about the use of fluoride consisting toothpaste which is helpful in protecting the tooth against decay. The study conducted by Reddy *et al.* [11] also reported that 92% of the population in their study was not aware of requirement of fluoride in the toothpaste. It is observed from this study that most of the children in school-going age do not have comprehensive knowledge of oral hygiene. Another study by Priya [12] also reported the overall knowledge to be low among school children.

The practices of oral hygiene among the students was significantly sound as most of them (79.33%) had brushed their teeth once a day, with toothpaste and fluoridated toothpaste, and rinsed their mouth with water once in a day after each meal, but only a few students (20.62%) were brushing their teeth twice a day. These practices were also in agreement with the findings of other studies conducted by Priya [12] and Kuppuswamy *et al.* [13] They reported that less percentage of children (38.33% and 17% respectively) were actually brushing their teeth twice a day.

There were few limitations of our study. First of all, our study was a cross-sectional study with relatively small sample size and hence, it was difficult to generalize the findings of the study. So, further study on the same topic is proposed with the larger number of study subjects. Since it was a questionnaire study, respondents may read in a different way for each question and subsequently reply will be based on their own interpretation of the question, reflecting the inherent limitations of such studies. There was a possibility that some of the students might have altered their behavior during the study period (e.g., increased brushing frequency). To minimize this, the investigator highlighted the anonymity of the participants before distribution of the Questionnaire, and participants were advised to fill the Questionnaire as independently as possible

CONCLUSION

In the present study, it was showed that secondary school children who were studying in Government schools have poor knowledge and personal oral hygiene practices as compared to private schools children. We recommend that the public health dentistry department of each dental college should carry out an integrated oral health promotion program through schools which should include periodic oral health screening and some preventive programs such as fluoride mouth rinse, cleaning of teeth, health education of school students and creating awareness regarding oral health maintenance.

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