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Research Article

Assessment of oral health hygiene among high school girls of Bengaluru city, India

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ABSTRACT

Background: Oral health is an essential component of general health and quality of life. Dental caries is a major oral public health problem particularly among the children and adolescents. The schools remain an important setting, offering an efficient and effective way to reach children worldwide. Hence, our study aims to assess the oral health hygiene and prevalence of dental caries among high school girls of Bengaluru city - south zone.
Methods: A cross sectional study was conducted for a period of four months (i.e.) September 2015 to December 2015 among high school girls of Bengaluru city. They were examined for their oral care, presence of caries and data regarding oral health hygiene was collected by using a semi-structured, indigenous, interviewer based questionnaire.
Results: The mean age was 14.2+0.57 years. Majority of the girls (74.4%) said that they brush once daily; 36.8% were unaware about the type of tooth brush used by them. Only few students (14.8%) were using fluoride toothpaste; 72% girls brush their teeth in horizontal direction; 23.2% clean their tongue and 20% use mouth wash; 44% rinse their mouth after eating a meal. Nearly half of the study sample (45.2%) were suffering from dental caries, with mean DMFT score 2.54.
Conclusions: Oral health hygiene habits among the study population were poor and needs to be improved. Awareness among the students about maintaining good oral health can be generated by involving the school teachers as they are considered as role models by the students.

Keywords: Oral hygiene, Oral diseases, Dental health, Dental caries, High school girls

INTRODUCTION

Oral health is an essential component of general health and quality of life. General health and oral health are inseparable and oral cavity is considered as the mirror which reflects general health. Oral health affects people physically and psychologically and influences how they grow, look, speak, chew, taste food and socialize.[1] It is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity.[2]

According to the World Health Report-2003, oral diseases qualify as a major public health problem owing to their high prevalence and incidence in all regions of the world. Dental caries and periodontal diseases are the two globally leading oral afflictions.[3] Worldwide, 60-90% of school children and nearly 100% of adults have dental cavities. The common risk factors for oral diseases are tobacco use, harmful alcohol use, an unhealthy diet, poor oral hygiene and social determinants.[4]

In the developing countries like India, dental health is often neglected by majority of population and also faces poor oral health because of challenges in rendering oral

health needs. It has been clearly indicated that dental caries is a major oral public health problem particularly among the children and adolescents.[5,6] As per National Health Survey conducted in 2004 throughout India, dental caries prevalence is as follows: 51.9% in 5-year-old children, 53.8% in 12-year-old children and 63.1% in 15-year-old teenagers.[7]

Dental Caries is a progressive irreversible microbial disease with multifactorial causes affecting the hard parts of the tooth. It not only causes pain and discomfort, but also places a financial burden on the parent. Furthermore, oral diseases restrict activities at school, at work, and at home causing millions of school and work hours to be lost each year throughout the world. The prevention of dental caries has long been considered as an important task for the health profession.[8]

Adolescents are considered among the healthier population groups, with low rates of mortality and being low utilizers of health services. Exposure to several risk factors usually starts in adolescence and may lead to chronic diseases in adulthood. The schools remain an important setting, offering an efficient and effective way to reach children worldwide and, through them, families and community members. Children are particularly receptive during this period and the earlier the habits are established, the longer lasting the impact.

In the light of this, our study aims to assess the oral health hygiene and prevalence of dental caries among high school girls of Bengaluru city-south zone.

METHODS

A cross sectional study was conducted for a period of four months (i.e.) September 2015 to December 2015. Based on National Health Survey - 2004 data where the prevalence of dental caries among adolescents was 63.1%, the sample size estimated was 234, and then rounded off to 250.[7] Permission was taken from the principals of the schools to do the study of Bengaluru city-south zone. Data was collected in different private girls' high schools through population probability sampling method till the desired sample was met. Adolescent girls of 8th, 9th and 10th standard were included in the study. Students with orthodontic brackets were excluded. They were examined for their oral care, presence of caries, lost or filled or missing tooth, etc. Data regarding frequency of brushing, changing toothbrush, use of tongue cleaner, mouth wash, etc. was collected by using a semi-structured, indigenous, interviewer based questionnaire. Confidentiality was maintained.

Data was entered in Microsoft excel sheet and analyzed using SPSS 21 software. Descriptive statistics such as frequency tables, pie diagrams and bar charts were used wherever necessary.

RESULTS

The mean age of the respondents was 14.2±0.57 years. Majority of the girls said that they brush once daily (n=186; 74.4%); 36.8% (n=92) were unaware about the type of tooth brush used by them and 35.2% (n=88) of the girls said that they use medium tooth brush. Only few students (n=37; 14.8%) were using fluoride toothpaste where as 72.4% (n=181) were unaware about presence or absence of fluoride in their paste. Around 72% (n=181) of the girls brush their teeth in horizontal direction, which is considered to be the dangerous method of brushing. Only 23.2% (n=58) of the sample cleans their tongue and 20% (n=50) of them use mouth wash. Most of the girls (n=110; 44%) rinse their mouth after eating a meal. Thirty six percent (n=90) and 22% (n=55) of the girls said that they notice bleeding from gums and smell from mouth respectively (Table 1).

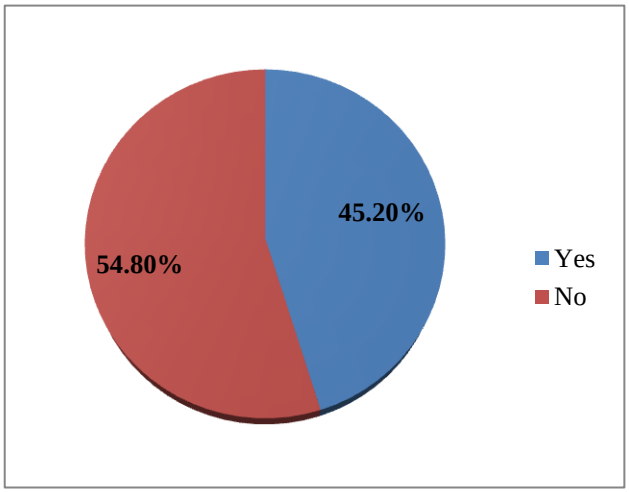

Figure 1: Prevalence of Dental caries (n=250).

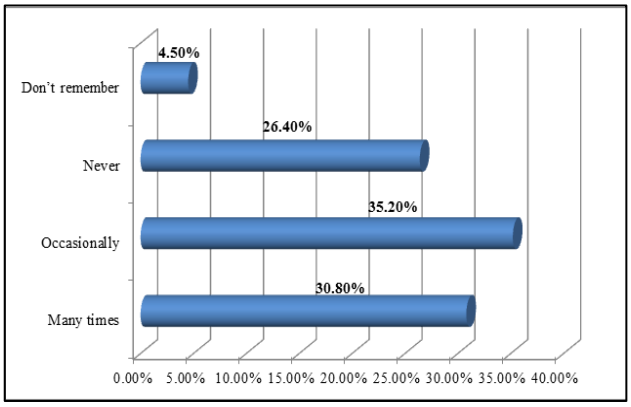

Figure 2: Toothache in last 6 months (n=250).

It was observed in our study that, nearly half of the study sample (n=113, 45.2%) were suffering from dental caries, with mean DMFT score 2.54 (Figure 1). And when asked about toothache in last six months, 35.2% (n=88) of the girls said that they had toothache occasionally, whereas 30.8% (n=77) of them said that they experienced it many

times (Figure 2). About half of the respondents (n=135; 54%) said that they visit dentist only in problem (Figure 3) and toothache (n=109; 43.6%) was the common reason reported for their last dental visit (Figure 4).

Table 1: Indicators of oral health hygiene (n=250).

Particulars	Response	Number	Percentage
Frequency of brushing teeth daily	Once	186	74.4%
	Twice	58	23.2%
	More than twice	6	2.4%
Type of tooth brush used	Hard	20	8.0%
	Medium	88	35.2%
	Soft	50	20.0%
	Unaware	92	36.8%
Use of fluoride toothpaste	Yes	37	14.8%
	No	32	12.8%
	Don't know	181	72.4%
Different types of brushing techniques	Horizontal	180	72.0%
	Vertical	20	8.0%
	Circular	15	6.0%
	Combined	35	14.0%
Frequency of changing tooth brush	Every 3 months	50	20.0%
	Every 6 months	32	12.8%
	Yearly	13	5.2%
	When worn out	155	62.0%
Cleaning tongue	Sometimes	58	23.2%
	Always	50	20.0%
	Never	142	56.8%
Use of mouth wash	Sometimes	50	20.0%
	Always	30	12.0%
	Never	170	68.0%
Rinse mouth after meals	Sometimes	110	44.0%
	Always	60	24.0%
	Never	80	32.0%
Noticed bleeding from gums	Yes	90	36.0%
	No	160	64.0%
Noticed smell from mouth	Yes	55	22.0%
	No	195	78.0%

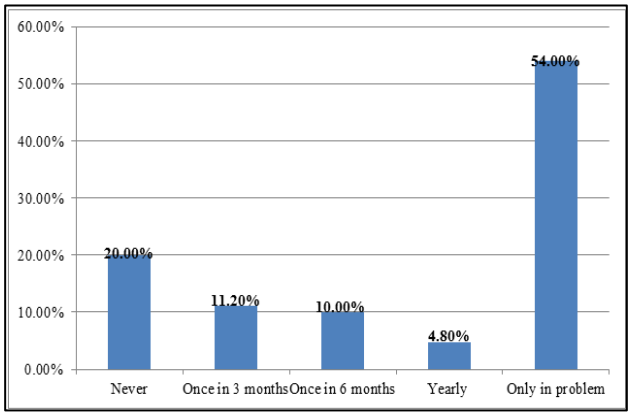

Figure 3: Visit dentist (n=250).

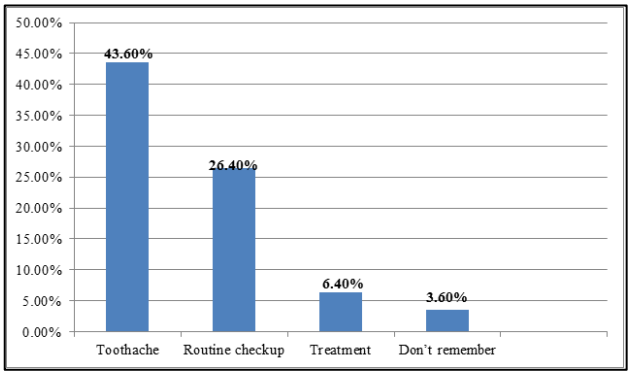

Figure 4: Reason for last dental visit (n=200).

DISCUSSION

Oral health hygiene is generally related to awareness and practicing of healthy habits. In our study it was observed that most of the respondents brushed at least once daily. Similar results were observed in study by Pratiti D, et.al., among school children of Sundarban, where 68.42% of them brushed once daily. These results were in contrast to study by Nirmalya M, et al.[5,9] Where 36.4% of the adolescent girls brushed at night also even though they studied in rural schools. Approximately 36.8% of the participants were unaware about the type of tooth brush used by them and only 20% of the sample use soft tooth brush. This proportion was quite better when compared to a study by Nikita J et al.[10] Where 50% of the respondents were unaware of the type of tooth brush and only 10% of them used soft tooth brush.

In our study only 14.8% girls used fluoridated tooth paste and many were unaware about presence or absence of fluoride in their paste and these results concurred with a study done by Kamble VS, et.al, where very few (13.2%) students used fluoridated tooth paste.[11] It is well known fact that fluoride is required for the mineralization of teeth and hence this necessitates to increase awareness among the students to use fluoridated tooth paste. It is noteworthy that 72% of the respondents brushed their teeth using traditional horizontal method, which may harm the tooth structure. Similar results were observed in study by Nikita J,et.al, where 75% of the sample did the same.[10]

It was also noted that only 20% of the studied population clean their tongue either with tooth brush or tongue cleaner. Surprisingly, these results differed from a study by Nirmalya M,et.al, where 81.1% of rural adolescent school girls practiced cleaning their tongue regularly.[9] This can be due to negligence regarding oral care among urban girls when compared to rural girls. Only few girls (12%) used mouth wash and this is in agreement with the findings of the study by Nikita J,et.al.[10] Also, only 24% of the students rinses their mouth after meals, similar to a study by Siraj A,et.al.[12] Among adolescents residing in an urban area of North India (21.6%). This missing and very basic method of maintaining oral hygiene is a clear indication of lack of awareness. Approximately, one-third of the girls (36%) reported bleeding of gums and 22% said that they notice smell from mouth. These findings were lower when compared to a study by Nikita J,et.al where 40% and 80% of the study sample noticed bleeding gums and bad breath respectively and this indicates poor oral hygiene.[10]

Dental caries is one of the leading problems in school going children as well as in adults. In the present study, the prevalence of dental caries was noted in almost half of the high school girls (45.2%). This is in agreement with the findings observed in studies done by Kulkarni SS et.al among 11-15 years old children in Belgaum and Dhar V et.al., among school going children of rural areas in Udaipur District with prevalence of dental caries 45.13% and 46.75% respectively. Another study by Pratiti D, et al., in Sundarban, reported the prevalence of dental caries among 13-14 years old school children to be 72% which is higher than reported in the present study.[5,13,14] Dulal D et al, conducted a study among children in coastal areas of West Bengal, they found that the prevalence of dental caries was 28.06% which is far below the prevalence in the present study.[15]

Another important finding in the present study was that nearly two-third (66%) of the respondents said that they experienced toothache in last six months. Similarly in a study done by Pratiti D et.al, toothache was observed among 58% children in the past 15 days.[5] Nearly half of the girls (54%) visited dentist only in problem and 20% of them never visited dentist, whereas in a study by Nirmalya M, et.al.[9] 50.8% of the study population never visited a dentist, which is higher when compared to the present study. And when asked about the reason for their last dental visit, toothache was reported by majority of the study sample. This finding differed from a study by Nirmalya M, et.al.[9] Where 71.4% of the children visited dentist for extraction or filling purpose. This indicates that oral health is always given a last priority and people visit dentist only when they are in problem like pain, caries, gum problems, etc.

Our study concludes that, oral health hygiene habits among the study population were poor and needs to be improved. This indicates that majority of the people are unaware about the relationship between oral hygiene and systemic diseases or disorders. Awareness among the students about maintaining good oral health can be generated by involving the school teachers as they are considered as role models by the students. By conducting parents and teachers meetings regularly at school, parents can be involved and educated regarding the importance of good hygiene practices in prevention of diseases. The importance of crucial role of dental check-ups at regular intervals to prevent and detect dental diseases like dental caries should be generated through health education and motivating people to visit a dentist. Keeping in view about the WHO goals for the year 2020 “Recommended Oral Self Care (ROSC)”, more awareness should be created among general population to improve the oral health.

CONCLUSION

Oral health hygiene habits among the study population were poor and needs to be improved. Awareness among the students about maintaining good oral health can be generated by involving the school teachers as they are considered as role models by the students.

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