

Original Research

Knowledge and Awareness about Dental Caries and Brushing Pattern in High Risk School Students: A Questionnaire Survey

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ABSTRACT:

Introduction: There is high prevalence of dental caries in India which can be attributed to the low public health awareness concerning the disease. Knowledge and awareness regarding proper oral hygiene habits may also be a contributing factor to this high prevalence of dental caries. Dental health education and promotion are important tools in combatting dental caries from an early age. **Aim:** The aim of the study was to assess the knowledge and awareness about dental caries and brushing pattern in high risk school students. **Materials and methods:** A cross-sectional self-administered questionnaire survey was conducted to assess the knowledge and awareness about dental caries and brushing pattern in school students in the age group of 12-18 years. Only those students who had experience of at least one decayed, missing (due to caries) or filled teeth were included in the study. Thus, a total of 110 students were included in this study. **Results:** Majority of the study participants had fair knowledge of dental caries, but only 28.18% had ever visited a dentist. 71.90% of the study population brushed their teeth less than twice a day and just 31.81% were aware of the anti-cariogenic potential of fluorides. Also, only 36.36% had knowledge of brushing techniques. **Conclusion:** School students even at high risk of dental caries avoid visiting the dentist. The brushing habits and patterns of these students are poor and are likely to promote development of dental caries.

Keywords: Knowledge, awareness, dental caries, brushing pattern, questionnaire.

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INTRODUCTION:

According to the World Health Organization (WHO), dental caries is a global public health concern and is also the most prevalent non-communicable disease.¹ Over the years, there has been reduction in the prevalence of dental caries in the developed nations, probably due to the application of preventive measures²,

dental caries has become even more widespread in developing countries like India. This can be attributed to poor public health awareness regarding the disease and its preventive measures.³

WHO also states that children and adolescents are at the greatest risk of dental caries.¹ This not only interferes with proper functioning of the teeth like chewing of

food and speech it can also affect the self- esteem of these children and adolescents at such young ages. Although, dental caries can have detrimental effects, it is still preventable.³ Hence, this study was conducted to assess the knowledge and awareness about dental caries and brushing pattern in high risk school students.

MATERIAL & METHODS:

The present cross-sectional questionnaire- based study was conducted from 05-01-2020 to 05-03-2020. A questionnaire containing questions on knowledge and awareness regarding brushing pattern and dental caries was designed from previous studies.^{4,5} The questionnaire consisted of ten closed-ended questions; five each on knowledge and awareness about dental caries and brushing pattern. The questionnaire was fabricated using survey monkey and link to the questionnaire was sent using a to 300 school students in the age group of 12-18 years. All questions were marked as mandatory for submission of the survey questionnaire. 243 replies were received. Since, caries experience is regarded as the single most powerful caries predictor in all age groups⁶, participants who

have/ had at least one decayed, missing or filled tooth due to dental caries were considered as ‘high-risk for dental caries’ and included in the study. 110 participants fulfilled the mentioned eligibility criteria and were included in the study. Data were recorded and tabulated. Descriptive statistics was used for analyzing the data.

RESULTS:

Table 1 displays the responses to the questions by each participant. Questions towards assessment of knowledge and awareness about brushing pattern and dental caries were included. All of the participants included in this study had at least one decayed, missing or filled teeth. 76.36% of study participants knew the causes of tooth decay and 70% agreed that tooth decay can be prevented. Only 28.18% of the study participants had ever visited a dentist.

Only 29.09% of the study participants brushed their teeth more than once and just 31.81% knew that the use fluoridated toothpastes can help prevent dental caries. Only 40.90% of the study population was aware of the correct technique for tooth brushing.

Table 1: Responses to questions on knowledge and awareness about dental caries and brushing pattern in high risk school students in the age group of 12-18 years:

S. No.	Question	Yes		No	
		Frequency	%	Frequency	%
1	Have you ever had any cavities/ lost a tooth due to tooth decay/ got a tooth filling?	110	100%	0	0
2	Do you know the common causes of tooth decay?	84	76.36%	26	23.63%
3	Do you think that tooth decay can be prevented?	77	70%	33	30%
4	Do you think regular visits to the dentist are necessary?	82	74.54%	28	25.45%
5	Have you ever visited a dentist?	31	28.18%	79	71.81%
6	Do you brush your teeth more than once a day?	32	29.09%	78	70.90%
7	Do you clean your teeth with toothbrush and toothpaste?	107	97.27%	3	2.72%
8	Do you feel tooth brushing twice a day can prevent tooth decay?	81	73.63%	19	17.27%
9	Do you know using fluoride toothpaste can protect your teeth from cavities?	35	31.81%	75	68.18%
10	Are you aware of the correct technique for tooth brushing?	40	36.36%	70	63.63%

DISCUSSION:

The current cross-sectional self-administered questionnaire-based survey evaluates the knowledge and attitude of high risk school students in the age-group of 12-18 years towards dental caries and brushing patterns. It also gives an insight into the prevalence of dental caries in school students. Out of 223 school students who submitted the survey 126 participants admitted to having at least one decayed, missing or filled tooth due to caries. This points towards a high caries prevalence of 45.26% in school children belonging to the age-group of 12-18 years. This finding is in agreement with previous studies by other authors.^{7,8} Possible reason for this high prevalence of dental caries could be either lack of awareness, ignorance or poor availability of dental services. Knowledge of the participants regarding dental caries was tested by asking them if they were familiar with the different causes of tooth decay, to which 84% of the participants replied 'yes'. Studies by Mhaske et al. (2018)⁹ and Rasul et al. also demonstrate comparable results i.e. 70% and 96.7% respectively. This depicts that high risk school students in the age of 12-18 years had basic knowledge of the etiology of dental caries. The high percentage may also be due to the fact that the study participants had experience of tooth decay which may have led them to explore the causes of the disease. 70% of the study participants were aware that dental caries is a preventable disease. This percentage is in congruity with a study conducted by Khan (2019) who reported an awareness of 68.3% towards caries prevention in 6-18 year old children.¹⁰ 74.54% of the study participants opined that regular visits to the dentist were necessary but surprisingly, even though all the study participants had past caries experience, only 28.18% of them had ever visited a dentist. This could be attributed to fear of dental procedures in the participants. These results are similar to other studies.^{5,11,12}

Concerning the brushing patterns of the study participants, it was noted that only 29.09% brushed their teeth more than once a day. This result is in conjunction with studies by Mhaske et al.⁹ (32%), Mehta et al.¹¹ (25%). This percentage is slightly lower than that reported by Harikiran et al.¹² (38.5%). Again, considering that all our study participants were at 'high risk of caries', this ignorance could be due to poor dental health education by their parents who did not encourage their children to brush twice a day from an early age.⁵ It also reflects that in India maintaining good dental health is not considered a priority as is general health. 91.81% of the study participants reported that they cleaned their teeth using toothbrush and toothpaste. This finding is in agreement with previous studies done by other authors.^{4,5} 73.63% of our study population felt that brushing teeth twice a day can help prevent dental

caries. This finding is in agreement with Harikiran et al.¹³ (75.1%) but our percentage is slightly higher than that reported by Suprabha et al.¹⁴ Only 31.81% of our study participants possessed the knowledge that brushing with a fluoridated toothpaste can help prevent tooth decay. On the other hand majority of our study population, i.e. 68.18%, were not aware of the anti-cariogenic potential of fluorides. These findings are similar to that reported by Harikiran et al.¹³ (36.3%). A similar study in Qatar by Al-Darwish (2016)¹⁵ reported that only 23.9% of school children could identify the action of fluoride against dental caries. Only 36.36% of our study participants knew the correct brushing technique. This finding is similar to that of Mhaske et al.⁹ (35%). This could be due to poor health education by parents and absence of visits to the dentist.

CONCLUSION:

From the findings of the present study it can be concluded that though high risk school students are aware of the etiology and detrimental effects of dental caries they avoid visiting the dentist possibly due to fear or because of ignorance of parents towards the dental health of their children. Another important finding was that even though majority of the study participants were aware that frequent tooth brushing can prevent tooth decay, they still chose brush not more than once a day. This demonstrates the low weightage given to oral and dental health as opposed to general health of the body. Also, majority of our study population were unaware of the beneficial effect of fluoride towards caries prevention which signifies poor oral and dental health education among such school students.

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