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Original Research

To assess the knowledge and awareness about dental caries and brushing techniques in school students

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ABSTRACT:

Aim: To assess the knowledge and awareness about dental caries and brushing techniques in school students. Methods: The current cross-sectional questionnaire-based investigation was carried out in the public health dental department. Previous research was used to create a questionnaire with questions on knowledge and awareness of brushing patterns and dental caries. The questionnaire included ten closed-ended questions, five on knowledge and awareness of dental caries and five on brushing patterns. The research comprised 100 individuals who met the aforementioned qualifying requirements. **Results:** 53 percent of students were female, 47 percent were male, and the majority of pupils were between the ages of 13-15. Questions regarding brushing patterns and dental cavities were added to measure knowledge and awareness. Every participant in this research had at least one decaying, missing, or filled tooth. Sixty-six percent of survey participants were aware of the causes of dental decay, and 69 percent thought that tooth decay may be avoided. Only 30% of survey participants had ever been to the dentist. Only 27% of research participants cleaned their teeth more than once, and only 35% were aware that using fluoride toothpaste may help prevent dental caries. Only 36% of the sample population was aware of the proper teeth brushing method. Conclusion: According to the results of this research, even though high risk school kids are aware of the aetiology and harmful consequences of dental caries, they avoid seeing the dentist, probably owing to fear or parental ignorance about their children's oral health. Another significant result was that, despite knowing that regular tooth brushing may help prevent tooth decay, the majority of research participants elected to clean their teeth just once a day. Keywords: knowledge, awareness, dental caries, brushing techniques, students

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INTRODUCTION

Dental caries is an oral health issue caused by plaque collection on the tooth surface, which converts sugar contained in meals and beverages into acid, causing tooth destruction. ¹ It is seen as a serious public health issue, impacting 2.4 billion people globally in 2010. ² It is associated with poor oral hygiene, a poor diet, and infrequent dental checkups. ³ Dental caries are a common health concern in children⁴, affecting 60-90 percent of them. Furthermore, dental cavities have a psychological impact on a child's quality of life⁵, subjecting him/her to pain and suffering at a young age. Children with caries were shown to be 1.3 times more likely to have an influence on their quality of life due to oral health issues. ⁶

With all of the aforementioned ramifications of dental caries, the need to address it becomes clear. To

comprehend the high prevalence, it is necessary to evaluate the many risk factors. Caries may be and new preventative managed measures implemented by recognising them. Inadequate oral hygiene habits are one of the risk factors for caries. Several studies have shown a link between tooth cavities and brushing practises. 7 One reason for this link is that regular brushing minimises the likelihood of tooth cavities by constantly removing plaque formation. ¹ Early childhood caries (ECC) and its more severe version (S-ECC) are virulent types of caries that begin shortly after tooth eruption, advance quickly, and have a long-term negative influence on the dentition. 8-10 This illness affects the overall population, but it is 32 times more likely to develop in newborns from poor socioeconomic backgrounds, who eat a high-sugar diet, and whose mothers have a low education level. ⁸ Geographical location has a significant impact on the occurrence of dental caries. It changes depending on where you are. According to the 2004 National Oral Health Survey report, caries prevalence in India was 51.9 percent, 53.8 percent, and 63.1 percent at ages 5, 12, and 15 years, respectively. ⁹ According to the World Health Organization, 60-90 percent of schoolchildren worldwide have had dental caries at some point during their school stay. 10 Tooth decay or dental caries may limit a child's participation in activities such as eating, playing, and socialising. It also impairs children's ability to communicate and concentrate, preventing them from performing to their full potential. ¹⁰

METHODS AND MATERIALS

The current cross-sectional questionnaire-based investigation was carried out in the public health dental department. Previous research was used to create a questionnaire with questions on knowledge and awareness of brushing patterns and dental caries. ^{11,12} The questionnaire included ten closed-ended questions, five on knowledge and awareness of dental caries and five on brushing patterns. The questionnaire was created using survey monkey, and the link to the questionnaire was distributed to 200 school children aged 10 to 17. All items on the survey form were marked as necessary for completion. There were 170 responses. Since then,

Table 1 Age and Gender distribution of students

of students					
Gender	Number	Percentage			
Male	47	47			
Female	53	53			
Age					
10-13	29	29			
13-15	44	44			
15-17	27	27			

Table 2: Responses to questions on knowledge and awareness about dental caries and brushing pattern in high risk school students in the age group of 10-17 years

Question	Yes		No	
	Frequency	%	Frequency	%
Do you feel tooth brushing twice a day can prevent tooth	73	73%	27	27%
decay?				
Do you know using fluoride toothpaste can protect your	35	35%	65	65%
teeth from cavities?				
Are you aware of the correct technique for tooth brushing?	36	36%	64	64%
Do you think regular visits to the dentist are necessary?	75	75%	25	25%
Have you ever visited a dentist?	30	30%	70	70%
Do you brush your teeth more than once a day?	27	27%	73	73%
Do you clean your teeth with toothbrush and toothpaste?	97	97%	3	3%
Have you ever had any cavities/ lost a tooth due to tooth	100	100%	0	0
decay/ got a tooth filling?				
Do you know the common causes of tooth decay?	76	76%	24	24%
Do you think that tooth decay can be prevented?	69	69%	31	31%

caries experience has been identified as the single most significant predictor of caries in all age categories.¹³ Participants were deemed 'high-risk for dental caries' and were included in the research if they had at least one damaged, missing, or filled tooth as a result of dental caries. The research comprised 100 individuals who met the aforementioned qualifying requirements. Data were collected and tabulated. The data was analysed using descriptive statistics.

RESULTS

Table 1 show that 53 percent of students were female, 47 percent were male, and the majority of pupils were between the ages of 13 and 15. Table 2 provides each participant's replies to the questions. Questions regarding brushing patterns and dental cavities were added to measure knowledge and awareness. Every participant in this research had at least one decaying, missing, or filled tooth. Sixty-six percent of survey participants were aware of the causes of dental decay, and 69 percent thought that tooth decay may be avoided. Only 30% of survey participants had ever been to the dentist. Only 27% of research participants cleaned their teeth more than once, and only 35% were aware that using fluoride toothpaste may help prevent dental caries. Only 36% of the sample population was aware of the proper teeth brushing method.

DISCUSSION

Dental caries is a complex illness. Individuals' dental caries status is affected by a variety of host, agent, variables. and environmental Among these characteristics are age, race, ethnicity, cultural influences, and food, which vary across locations and people and have a significant impact in determining dental caries status. The present cross-sectional selfadministered questionnaire-based study assesses the knowledge and attitudes of high-risk school pupils aged 10-17 years concerning dental caries and brushing habits. It also provides information on the prevalence of dental caries among schoolchildren. 100 of the 200 students who completed the survey acknowledged to having at least one decaying, missing, or filled tooth owing to caries. This indicates a high caries prevalence of 50% in school-aged children aged 10-17 years. This discovery is consistent with prior research by other writers. 14,15 The high frequency of dental caries might be attributed to a lack of knowledge, ignorance, or a lack of dental treatments. The participants' knowledge of dental caries was examined by asking them whether they were acquainted with the various causes of tooth decay, to which 76 percent of the participants responded 'yes.' Mhaske et al. (2018)¹⁶ and Rasul et al. (2018)¹⁷ also show equivalent findings, with 70% and 96.7 percent, respectively. This shows that highrisk school pupils aged 10 to 17 years have a basic understanding of the genesis of dental caries. The high proportion might also be attributed to the fact that the research participants had experienced tooth decay, which motivated them to investigate the causes of the condition. Dental caries is a preventable condition, according to 69 percent of research participants. This figure is consistent with a research done by Khan (2019), which found that 68.3 percent of 6-18 year old children were aware of caries prevention.¹⁷ Although 75 percent of research participants believed that frequent visits to the dentist were required, just 30 percent had ever seen a dentist, despite the fact that all of them had previous caries experience. This might be linked to the participants' dread of dental operations. These findings are consistent with those of previous investigations. ^{18,19} In terms of brushing habits, just 27 percent of research participants cleaned their teeth more than once every day. This finding is consistent with those of Mhaske et al.16 (32%), Mehta et al.18 (18%), and others (25 percent). This proportion is somewhat lower than what Harikiran et al.¹⁹ reported (38.5 percent). Again, given that all of our research participants were at "high risk of caries," this ignorance may be attributed to their parents' lack of oral health knowledge, who did not urge their children to brush twice a day from an early age. 12 It also reflects the fact that in India, maintaining excellent oral health, like overall health, is not a priority. 97 percent of research participants said they cleaned their teeth using a toothbrush and toothpaste. This discovery is consistent with prior research by other writers.^{11,12} Brushing teeth twice a day, 69 percent of our research group, may help prevent dental caries. This conclusion is consistent with that of Harikiran et al.20 (75.1 percent), however our proportion is somewhat higher than that of Suprabha et al. ²¹ Only 35% of our research participants were aware that brushing with fluoride toothpaste may help prevent tooth decay. On the other hand, the majority of our study population, 65 percent, was unaware of fluoride's anti-cariogenic potential. These results are consistent with those reported by Harikiran et al.²⁰ (36.3 percent). According to Al-Darwish $(2016)^{22}$, a similar research in Qatar, just 23.9 percent of schoolchildren could identify fluoride's activity against dental cavities. Only 36% of our research participants used the proper brushing method. This result is comparable to Mhaske et al.¹⁶ (35 percent). This might be attributed to inadequate health education by parents and a lack of dental appointments.

CONCLUSION

According to the results of this research, even though high risk school kids are aware of the aetiology and harmful consequences of dental caries, they avoid seeing the dentist, probably owing to fear or parental ignorance about their children's oral health. Another significant result was that, despite knowing that regular tooth brushing may help prevent tooth decay, the majority of research participants elected to clean their teeth just once a day. The majority of our research group was uninformed of fluoride's favourable impact on caries prevention, indicating a lack of oral and dental health education among such school children.

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