

Knowledge, Attitude, and Practice of Parents toward Their Children's Oral Health and its Influence on the Dental Caries Status of 5–10-year-old Schoolchildren in Nashik, Maharashtra: A Cross-sectional Study

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ABSTRACT

Aim: The aim of the present study is to assess the knowledge, attitude, and practices of parents toward their children's oral health and its influence on the dental caries status of 5–10 years old schoolchildren in Nashik, Maharashtra.

Materials and methods: A cross-sectional questionnaire-based study was conducted among parents of 5–10 years old school children who visited our hospital. A total of 504 children and their parents were included in the study. Clinical examination of children was done using DMFT and deft index. A self-designed questionnaire was given to the parents to assess their knowledge, attitude and practices toward their children's oral health. Statistical analysis was performed using EPI INFO version 6.04. ANOVA test was used to test the association between dental caries status and KAP. p -value < 0.05 was considered to be statistically significant.

Results: The mean DMFT was 1.6 ± 1.5 and mean deft was 6.6 ± 3.4 . Majority of the parents (64.9%) showed fair knowledge, attitude, and practices. There was no significant difference between mean DMFT/defit and parental KAP.

Conclusion: Overall the parents in the present study had reasonable KAP about oral health of their children. Deficient areas of oral health awareness include importance of milk teeth and their treatment, regular dental visits, and dietary practices.

Clinical significance: Oral health awareness programs should be directed toward parents and should emphasize on topics such as importance of milk teeth and their treatment, regular dental visits, and dietary practices.

Keywords: Cross-sectional study, Dental caries, Parents, Pediatric dentistry, Primary teeth, Questionnaire.

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INTRODUCTION

Dental caries, a common disease in children, is considered a major public health problem globally and if left untreated, it can affect a child's quality of life in the form of pain, discomfort, inability to chew, dental sepsis, etc., which may result in loss of school days.¹ Poor oral health also has a significant impact on the growth and cognitive development of a child by interfering with nutrition, concentration, and school participation.²

Dental caries being a multifactorial disease is associated with a number of risk factors such as dietary habits, oral hygiene practices, nutritional imbalances, salivary flow and composition, use of fluorides, etc. Additionally, parental education, socioeconomic status, poverty, lack of awareness about dental diseases are also associated with risk of dental caries.³ The mothers as well as the entire family play a key role in influencing the oral health behaviors of children.⁴ Parents are directly responsible for the dental health of their offspring and can play an important role in preventing oral diseases in children.⁵ Their knowledge on health including oral health affects most of their decisions with regard to the health of their children.⁶

Parents are decision makers in matters of children's health and healthcare. Therefore it is essential to explore their knowledge, attitude, and practices as it affects the dental care children receive at home and their access to professional dental services. As young children and their mothers are an important target group for oral

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health education⁷ the oral health awareness programs may be directed toward them. In order to assess the magnitude of the preventive task it is necessary to know the extent and severity of the disease. In the present study an attempt was made to assess the knowledge, attitude, and practices of parents toward their children's oral health and its influence on the dental caries status of 5 to 10 years old school children in Nashik, Maharashtra.

MATERIALS AND METHODS

A cross-sectional questionnaire based study was conducted for 14 months among parents of 5 to 10 years old schoolchildren who visited MGV's KBH dental college and hospital, Nashik, Maharashtra. Ethical clearance was obtained from Institutional Review Board and an informed consent was obtained from the parents. A total of 504 children and their parents were included in the study. Clinical examination was done to assess dental caries status of children by using DMFT and deft index. The examiner and recording assistant were trained and calibrated prior to the study to reduce intra examiner variability [Kappa statisti $c = 0.82$].

A self-designed questionnaire was given to the parents to assess their knowledge, attitude, and practices toward their children's oral health. The first part of the questionnaire consisted of demographic data and the second part consisted of 15 multiple choice close-ended questions related to knowledge (6), attitude (5) and practices (4) toward children's oral health. The test-retest reliability of the questionnaire was pretested and found suitable [Kappa coefficient $t = 0.93$]. Incompletely filled questionnaires were not included in the study.

To assess the responses for the questionnaire, a scoring system was developed. Scores were based on the number of correct/favorable answers given by parents. The correct/favorable answer is given a value of 1 and incorrect/unfavorable answer is given a value of 0. Overall [KAP] knowledge, attitude, and practice were scored by addition of each component i.e., Knowledge + Attitude + Practice score (Table 1).

Clinical examination for the presence of carious lesions was done using DMFT Index for permanent teeth and deft Index for primary teeth. Statistical analysis was performed using EPI INFO version 6.04. ANOVA test was used to test the association between dental caries status and KAP. p -value < 0.05 was considered to be statistically significant.

RESULTS

The study consisted of 504 children of 5 to 10 years age-group and their parents, among whom 326 [64.7%] were boys and 178 [35.3%] girls.

Questions Related to Knowledge

Majority of parents (57.3%) felt that the children should brush their teeth themselves while 42.1% parents felt that it should be done by parents. About 81.7% parents answered that the child should brush twice daily, and 2.8% parents said once daily. Nearly 92.7% parents think that teeth should be cleaned by using toothbrush and toothpaste, 6.3% parents think using toothpowder. Among the study population 51.8% parents felt that a child's first visit to a dentist should be only after toothache, 18.4% answered after tooth decay. Only 15.4% parents felt that dentist should be visited after the eruption of first milk tooth. Nearly 52.2% parents answered that dental caries is a disease and for which treatment is required.

Around 19.6% parents thought that dental caries is a stain which might disappear after brushing. About 75.6% parents did not know about the treatment of primary teeth.

Questions Related to Attitude

Among the total study population 96% of parents would like to have decay free teeth of their children. About 49% parents said that milk teeth are important for eating, talking and maintaining the space in mouth until permanent teeth erupts. Nearly 23% parents don't know the importance of milk teeth. Around 93.8% parents gave equal importance to dental treatment and other health treatments whereas only 6.2% people don't considered dental treatment as important as other health treatments. About 84.1% parents said that they would take suggestion of pedodontist if they encounter oral diseases. Among the study population, 58.7% parents knew that a pedodontist can do a better treatment of their children. Nearly 11.5% parents said children can also be treated by general dentist. Around 26.4% parents don't know about pedodontist and dental treatment.

Questions Related to Practice

Out of 504, 51% parents haven't made dental visit previously, whereas 49% parents have visited a dentist. Only 35.7% parents had regular dental check-up of their children where as 64.2% parents did not take their children for regular dental check-up. Among the study population 70.4% parents offer sweets, soft drinks, chocolates and chips to their children.

Overall Knowledge, Attitude, and Practice

Based on scoring criteria, it was found that 23.6% [119] parents exhibited good KAP, 64.9% [327] showed fair KAP and 11.5% [58] showed poor KAP (Fig. 1).

Clinical Examination

The prevalence of dental caries was found to be 61.1% in permanent dentition by DMFT index. There was no difference in prevalence of dental caries among girls and boys. Highest prevalence of DMFT was found amongst 10 years old children [83.3%].

The prevalence of dental caries was found to be 97.8% in primary dentition by deft index. The proportion of dental caries in primary teeth was slightly more among boys [98.1%] compared to girls [97.1%]. All age groups showed high prevalence of deft.

The association of mean DMFT and deft values with KAP scores is mentioned in Table 2.

DISCUSSION

Children spend most of their time with their parents or guardians at home. Parents play a huge role in inculcating good oral habits in their children. Oral disease, predominantly dental caries in young children can be prevented to a great extent if parents are sufficiently educated and motivated. Parental knowledge was found to be positively correlated to the dental caries status of children in various

Table 1: Scoring criteria for knowledge, attitude, and practice components

	<i>Good</i>	<i>Fair</i>	<i>Poor</i>
Knowledge	≥ 5	3-4	≤ 2
Attitude	≥ 4	3	≤ 2
Practices	≥ 3	2	< 2
Overall KAP (K+A+P)	≥ 11	7-10	≤ 6

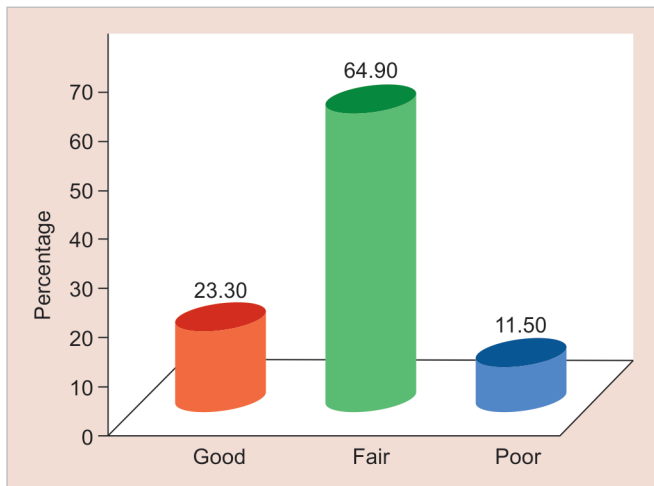


Fig. 1: Percentage distribution of study population based on KAP scores

studies.^{8,9} But still in developing countries like India the parental awareness about these first set of teeth is very less.¹⁰ Little data is available on the initiative shown by parents for preventive oral care of their children in India. This study was conducted to assess the oral health knowledge, attitude, and practices of the parents of 5 to 10 years old children attending MGV's KBH dental college and hospital, Nashik, and to find out its influence on the dental caries status of their children.

The present cross-sectional study includes a total of 504 parents and their children aged 5–10 years. 42.1% parents felt that children should be assisted when they brush their teeth. Majority of parents assisted their children while brushing their teeth according to Kaur B et al. [57%]¹¹ and Dikshit P et al. [77%].¹² As children below 6 years of age lack manual dexterity, they may not be able to brush their teeth on their own. Therefore it is recommended that parents guide and supervise their children during toothbrushing. Gokhale N et al.⁷ reported that significantly less number of carious teeth were found in children whose parents guided them while they cleaned their teeth.

In the present study 81.7% parents said that children should brush their teeth twice a day. These results are similar to those of other studies wherein 70.5%, 71%, 78.5%, and 80.5% of parents felt that children should brush their teeth twice a day.¹³⁻¹⁶ This could be because of higher brushing knowledge of parents, most of whom were educated in the present study. In current study 92.7% parents think that teeth should be cleaned by using toothbrush and toothpaste. In other studies 56.5%,¹² 82%,¹⁷ and 93%⁴ used toothbrush and toothpaste for cleaning their teeth. Children who did not use toothbrush and toothpaste for cleaning their teeth had 1.56 times higher chances of having dental caries compared to those who used.⁴

In present study 49% parents knew importance of milk teeth which was greater than study done by Nagaveni NB et al. [18%],¹⁰ Gokhale N et al. [22.6%],⁷ Suresh BS et al. [27.1%],¹⁸ Mehta N et al. [32.7%],¹⁹ and Dikshit P et al. [47.6%].¹² Shetty RM et al.¹⁶ reported that [71.7%] majority of parents felt that milk teeth require good care even though they are going to be shed. Suma G et al.⁴ reported that those children whose parents did not give importance to milk teeth had 1.67 times higher chances of having dental caries compared to others.

In present study 75.6% of parents did not know about the treatment of primary teeth although 52.2% parent's had

Table 2: Association of KAP score with mean DMFT and deft indices

KAP	DMFT(SD)	deft(SD)
Good	1.63(±1.6)	6.21(±3.7)
Fair	1.56(±1.6)	6.77(±3.3)
Poor	1.72(±1.5)	6.39(±3.2)
p-value	0.76	0.28

knowledge about dental caries. These results were similar to a study conducted by Al-omiri MK et al.²⁰ in which 32% had knowledge about dental caries but 68% didn't know about the treatment of primary teeth. This may be attributed to the lack of importance given to primary teeth, hence treatment for primary teeth is not known by the parents.

In present study 96% parents wanted cavity free teeth for their children. This showed that majority of parents had positive dental attitude. 70.4% parents offer sweets, soft drinks, chocolates, and chips to their children. Peterson et al. [74%]²¹ and Neupaul P et al. [88.9%]¹⁵ found that majority of parents knew that dental caries was caused by sweets and candy. Parents who were not able to control child's sugar consumption were significantly associated with higher dmft score in their children.⁴ Parents may be encouraged to give such nutritious snacks to their children instead of sugary snacks and candies. In the present study 93.8% parents considered dental treatment to be equally important as other health treatment. Results of this study were similar to the study done by Saied-Moallemi Z et al.²² in which 75% mother reported dental disease to be as important as other diseases.

In present study, 84.1% parents answered that they will take a suggestion from pedodontist if their child's teeth are decayed while in a study done by Nagaveni NB et al.¹⁰ only 1.4% parents said so. Surprisingly, many of parents in the present study felt that pediatric dentist is the right person to consult for their children. In this study only 35.7% parents took their children for regular dental check-up, similar to study done by Al-Omiri MK et al. [33%]²⁰ and in contrast to Rajab LD et al. [11%]²³ and Dikshit P et al. [11.9%].¹² Regular dental visits are important as oral diseases can be diagnosed and managed at an early stage, and prevented from progressing further. 51.8% parents made first visit to the dentist only after toothache. A majority of parents visited dentist only when need arises as per Shetty RM et al. [59.3%],¹⁶ Mehta N et al. [60.2%],¹⁹ Gokhale N et al. [77.5%].⁷ Children must have their first dental examination at 1 year of age or within 6 months of the eruption of the first tooth. The pediatric dentist can inform the parent and/or caregiver about the child's tooth development, the prevention and causes of oral diseases and appropriate treatment.

In present study, prevalence of dental caries in permanent teeth of study population was 61.1% by DMFT index which was lower than study done by Villalobos-Rodelo JJ et al. [82%].²⁴ Mean DMFT in this study was 1.6 ± 1.5, compared to 1.4,¹⁷ 1.62⁴ in other studies. In present study, prevalence of dental caries in primary teeth of study population was 97.8% by deft index which was similar to study done by Begzati A et al. [94.4%]²⁵ and Villalobos-Rodelo JJ et al. [90.2%].²⁴ Mean deft in this study was 6.6 ± 3.4, which was similar to a study done by Begzati A et al. [6.62 ± 2.87]²⁵ and Azimi S et al. [6.0].²⁶ In this study mean deft was higher than study done by Joshi N et al.²⁷ [2.09 for boys and 1.36 for girls] and Mehta N et al. [3.13 ± 1.79].¹⁹ The present study showed higher caries prevalence in primary teeth than in permanent teeth. This could be attributed to the fact that the permanent teeth have a lower susceptibility to

dental caries. It may also be due to the lower calcium content and structural differences in primary teeth.

In present study, total KAP score was divided into good, fair, and poor. In fair KAP, mean DMFT score was less [1.63 ± 1.6] and high in poor KAP [1.72 ± 1.5]. There was little difference among good, fair and poor groups of KAP which was not statistically significant [p value = 0.76]. Children of parents with high knowledge score showed low dmft as per Azimi S et al.²⁶ and Dikshit P et al.¹² Adequate oral health attitude and practices were associated with lower DMFT/dmft scores as reported by Dikshit P et al.¹² Mehta N et al.¹⁹ reported that parental oral health-related knowledge and attitude were statistically significantly associated with the presence of dental caries in the children. In good KAP deft, score was less [6.21 ± 3.7] and high in poor KAP [6.39 ± 3.2]. There was little difference among good, fair and poor KAP groups which was not statistically significant [p value = 0.28]. In present study as KAP increased there was decrease in DMFT and deft score but the association between KAP and DMFT, KAP and deft was not statistically significant. Majority of parent's had fair knowledge, attitude and practice toward oral health. There is a need of intensive coordinated efforts by pediatricians, pediatric dentists, and other health care professionals to cultivate and support positive attitudes among parents.

Limitations of the Study

In the present study children were not evenly distributed among all age groups, so the outcome of the results may vary accordingly.

CONCLUSION

Overall the parents in the present study had reasonable KAP about oral health of their children. Association between KAP with DMFT and KAP with deft was not statistically significant. Inadequacy in some areas of oral health awareness was reflected in the poor dental caries status of the children in primary teeth. Deficient areas of oral health awareness include importance of milk teeth and their treatment, regular dental visits, and dietary practices.

CLINICAL SIGNIFICANCE

Oral health awareness programmes should be directed toward parents and should emphasize on topics such as importance of milk teeth and their treatment, regular dental visits, and dietary practices.

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