

Knowledge, Attitude, and Practices of Oral Hygiene Care among 12-year-old Children in Chengalpattu District, India

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ABSTRACT

Objective: Oral hygiene knowledge is considered an essential prerequisite to any community member. Dental caries is highly prevalent among children and persists to be a significant public health problem. Hence, this study was conducted to assess the knowledge, attitude, and practices of oral hygiene care among 12-year-old children in Chengalpattu district, India.

Materials and methods: A cross-sectional descriptive study was conducted among 228 school children in Thirukalukundram Taluk, Chengalpattu district. The questionnaire has demographic data and five questions on knowledge toward oral hygiene maintenance, five questions on students' attitude toward oral hygiene maintenance, and five questions toward oral hygiene practices. Data obtained were statistically analyzed and results have been obtained.

Results: Almost 57.3% students were aware that bleeding gums indicate gum disease. Most of the participants (61.6%) knew the symptoms of dental caries; 98.1% students used tooth paste and brush for brushing; 74.4% students never visit a dentist even on discomfort, 22.3% students visit a dentist on discomfort, 2.4% students visit a dentist once a year, 0.9% students visit dentist once in 6 months; 77.3% of students were aware that brushing before bed is mandatory.

Conclusion: Children had good knowledge on oral hygiene practices; however, few of them exhibited a negative attitude toward practice of recommended oral hygiene measures which can be addressed in future by motivational programs on oral hygiene.

Keywords: Attitude, Knowledge, Oral hygiene, Practice, Students.

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INTRODUCTION

Oral hygiene knowledge is considered an essential prerequisite to any community member. The American dental association recommends that to avoid oral diseases, an individual should brush and floss at least once a day and visit a dentist regularly.¹ Lack of oral hygiene practices leads to development of dental diseases. Oral hygiene maintenance often remains an ignored practice among people of low socioeconomic status. Studies indicate that 90% students have experienced dental caries that leads to tooth loss at very young age.²

Dental caries is highly prevalent among children and persists to be a significant public health problem. It has detrimental consequences on children's quality of life by inflicting pain, premature tooth loss and malnutrition, eventually influencing overall growth and development.³ The children suffering from poor oral health are 12 times more likely to have restricted activity days as compared to their healthy counterparts.⁴

The National Oral Health Survey and Fluoride Mapping 2003 reported that the prevalence of dental caries among 12-year-old children was 72.5% and among 15-year-old children was 75.4% in India.⁵ Dental caries is a preventable disease, and if the burden of factors leading to such condition is known only, then better health education activities can be designed.⁴ Oral health care in rural areas is limited due to shortage of dental workforce, financial constraints, and lack of perceived need for dental care.⁶

Considering the epidemiological triad for the causation of dental caries, there is a need to assess the host factors such as oral health knowledge, oral hygiene practices, dental visits and eating habits of the children. Hence, a cross-sectional study was planned in all zones in Chennai to prioritize the area requiring the most public health attention for future government-based

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awareness and treatment programs to be planned.⁷ So to assess the attitude, knowledge and oral hygiene practices among children of rural regions, a questionnaire-based study was conducted in government schools of Chengalpattu district. Twelve-year-old school children were included in the study and the study was performed.

MATERIALS AND METHODS

Type of study: A cross-sectional descriptive study was conducted among school children in Thirukalukundram Taluk, Chengalpattu district. Sample size for the present study was calculated to be $n = 228$; based on the study conducted by Sharva et al.³ in Bhopal district in 2017, using OpenEpi statistical software. Prior to start of the study approval has been obtained from the Institutional Scientific Review Board (ISRB) of Asan Memorial Dental College and Hospital.

Inclusion Criteria

Twelve-year-old school children were included in this study.

Exclusion Criteria

- Children with developmental defects of maxillofacial region.
- Children under fixed orthodontic therapy.
- Children with mental retardation.

Survey instrument consists of a self-administered questionnaire to assess the oral hygiene care knowledge, attitude, and practices among school children.

The questionnaire has demographic data and five questions on knowledge toward oral hygiene maintenance, five questions on students' attitude toward oral hygiene maintenance and five questions toward oral hygiene practices. Followed by assessing the questionnaire, clinical examination was performed to access DMFT using WHO Oral Health Surveys 2013.⁸

The survey questionnaire was validated with the help of children of same age-group reporting to Asan memorial dental college and hospital prior to the start of the survey. The examiners were trained and calibrated in the department of Public Health Dentistry, Asan Memorial Dental College and Hospital to access DMFT by WHO criteria, interexaminer reliability was $K(Kappa) = 0.87$ (good).

Statistical analysis was performed using SPSS version 23, Chi-square test and independent sample *t*-test were used for comparison.

RESULT

A total of 228, 12-year-old school children of Chengalpattu district, India, participated in the study of which $n = 113$ (49.8%) were male and $n = 115$ (50.2%) were female.

Figure 1 depicts the knowledge of students on oral hygiene practices. Out of the 228 children, $n = 63$ (27.5%) students had good knowledge that brushing prevents bad breath, dental disease, and bleeding gums, while $n = 160$ (70.1%) agreed that brushing results in only one of the above and $n = 5$ (2.4%) students were not aware of the purpose of cleaning. $n = 16$ (7.1%) students had misunderstood that bleeding gums indicate healthy gums; $n = 131$ (57.3%) students were aware that bleeding gums indicate gum disease, while $n = 81$ (35.5%) students did not know the indications of bleeding gums. Only $n = 16$ (7.1%) students knew all the causes of dental caries while $n = 203$ (89.1%) students knew at least one cause of dental caries; $n = 9$ (3.8%) students did not know the cause of dental caries. $n = 21$ (9%) students did not know the symptoms of dental caries; $n = 140$ (61.6%) students knew the symptoms of dental caries, while $n = 67$ (29.4%) students knew only one symptom of dental caries; $n = 62$ (27%) students agreed that dental disease affects overall health, while $n = 112$ (49.3%) students did not know the effects of prolonged dental disease on overall health; $n = 54$ (23.7%) students agreed that dental disease may be affecting overall health.

On assessing the dental practices of the students Figure 2 shows that $n = 170$ (74.4%) students never visited a dentist even on discomfort, while $n = 51$ (22.3%) students visited a dentist on discomfort; $n = 2$ (0.9%) students visited a dentist once in 6 months and $n = 5$ (2.4%) students visited a dentist once a year.

Figure 3 shows that $n = 147$ (64.5%) students used little amount of tooth paste, while $n = 60$ (26.5%) adapted to the practice of using tooth paste along the length of the tooth brush while only $n = 21$ (9%) of the students used peanut-sized amount of tooth paste for brushing which is recommended for children of this age-group.

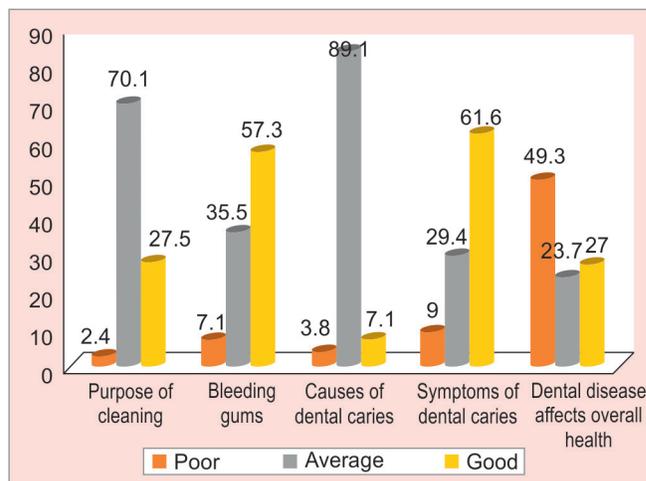


Fig. 1: Student knowledge on oral hygiene

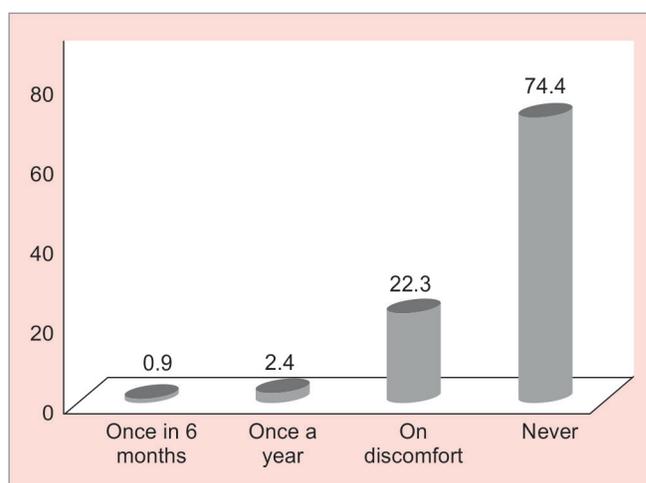


Fig. 2: Dental visit practice among students

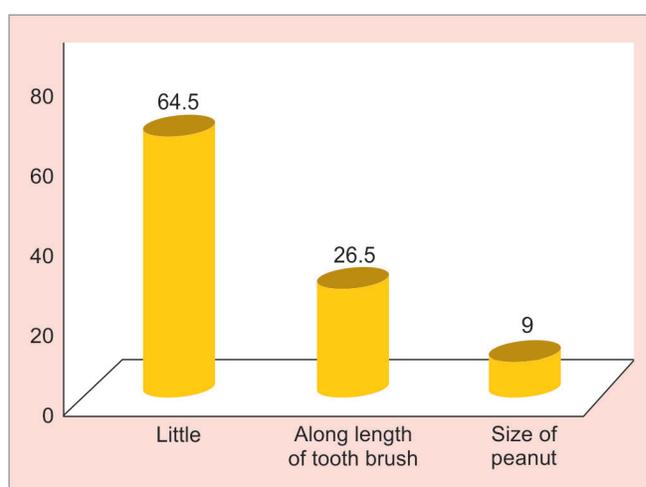


Fig. 3: Quantity of tooth paste used

Figure 4 depicts that $n = 125$ (55%) students did not know about the frequency of changing tooth brush; $n = 77$ (33.9%) students changed their brush once in 3 months and $n = 16$ (7.1%) students changed their brush once in 6 months.

Figure 5 shows $n = 188$ (82.5%) students to be brushing their teeth once a day, while only $n = 40$ (17.5%) students brushed twice daily.

Figure 6 indicates $n = 111$ (48.8%) students brushed for 2–3 minutes and $n = 51$ (22.3%) students brushed for more than 5 minutes daily.

Figure 7 shows a majority of $n = 224$ (98.1%) students to be using tooth brush and paste for brushing and a negligible amount of students to be using finger or neem stick for cleaning their teeth.

Figure 8 states that $n = 176$ (77.3%) students were aware that brushing before bed is mandatory, while $n = 52$ (22.7%) students were not aware about the importance of brushing before bed; $n = 117$ (51.23%) of students knew that caries affects the appearance of tooth, whereas $n = 60$ (26.5%) disagreed to the fact of caries affecting tooth appearance, while $n = 51$ (22.3%) students did not know the effect of dental caries on the appearance of tooth. About $n = 116$ (50.7%) students knew that dental problems lead to medical complications, whereas $n = 112$ (49.3%) of students were not aware of the complications of untreated dental problems; $n = 223$ (97.8%) students showed positive attitude toward accepting new dental practices.

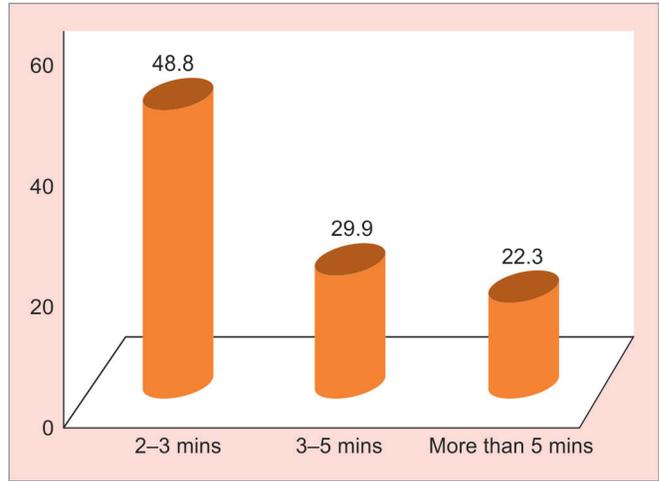


Fig. 6: Duration of brushing

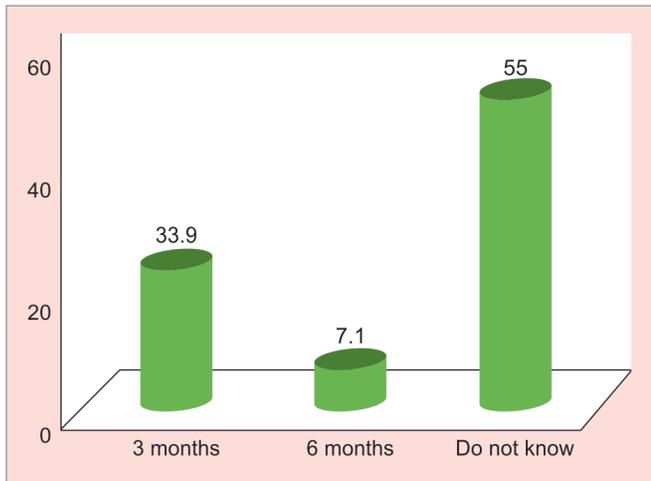


Fig. 4: Frequency of changing toothbrush

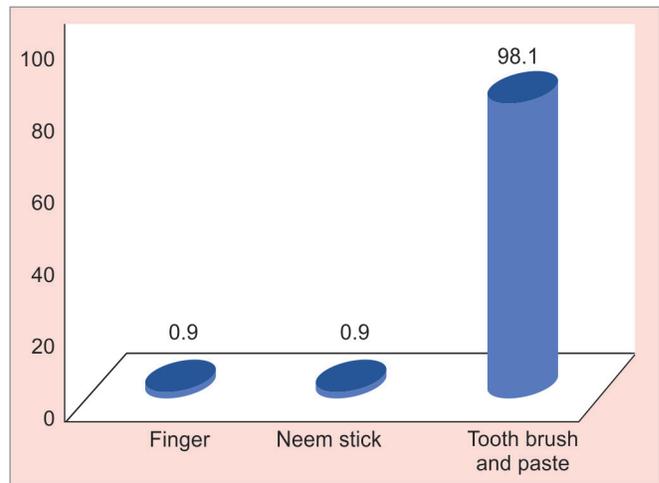


Fig. 7: Materials used for brushing

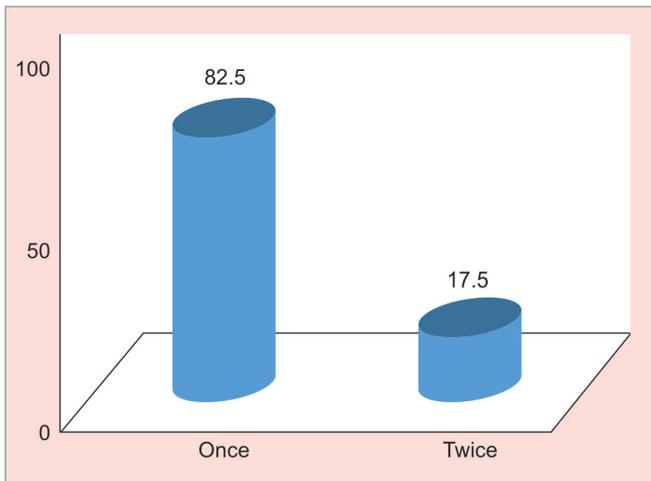


Fig. 5: Frequency of brushing

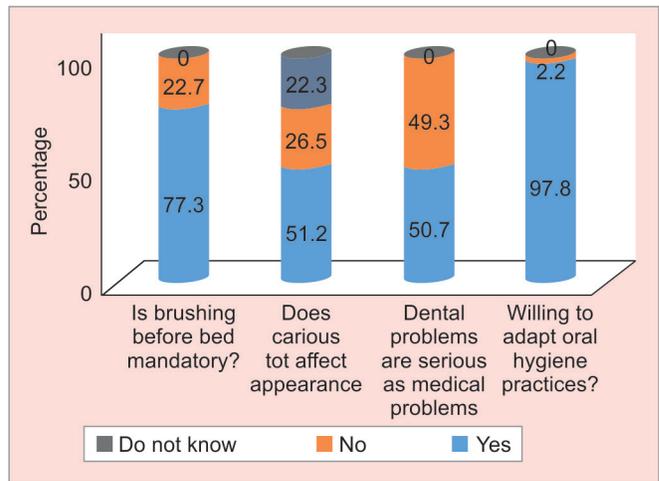


Fig. 8: Attitude of students toward brushing

DISCUSSION

Oral hygiene is vital to an individual's overall health. The primary goal is to prevent plaque-build up that may cause tooth decay. Childhood is the age where children develop their attitude toward oral health. We must target school children for educating and motivating them for oral health maintenance and awareness. It is important to start oral health education in the regular curriculum at school level.⁹ This aids in control of oral-dental problems. This paper focuses on assessment of knowledge, attitude, and practices of school children toward oral health. The school children had shown very good response toward the study.

In total, 57.3% students were aware that bleeding gums indicates disease, but 35.5% did not know the indications of bleeding gums, which is significantly less than the study by Farsi et al. in which 45.9% of the study population were unaware of the indications of bleeding gums indicating better awareness in our study population.¹⁰

Only 17.5% children brushed twice daily pertaining to the fact that parental guidance toward oral health education is still lacking. This survey found that significantly high percentage (82.5%) of children brushed their teeth once daily. Similar results were seen in the study by Al-Omari et al. 2006 in North Jordan.¹¹ The fact that all the children examined belong to government school and most of them come from low and middle socioeconomic families are responsible for this findings. The frequency of brushing twice was more common in urban schools as compared with rural schools, which is reported by Mahesh et al.¹²

About 7.1% of students reported to change their tooth brush once in 6 months; 33.8% of students changed it once in 3 months, whereas 55% of students were not aware of when to change their toothbrush. This may be due to the failure of students to visit the dental clinic at regular intervals similar to the study conducted by Sathish Vishwanathaiah, in which more than 50% of children were not aware about change of toothbrush at regular intervals.⁹

Dental disease affects overall health of humans. About 27% of students agreed that oral health has significant role in general health, which is comparatively less than 100% of students being aware of the effects of dental disease on overall health.⁹ So this mindset of students can be corrected by proper education to children at school itself and parent awareness programs.

The oral health practices assessment found that 74.4% students never visited a dentist which is comparatively low when compared to the study from Nepal which reported 93% children of having never visited a dental care service indicating better dental attendance in our country.¹³

On practice most of school children (82.5%) used to brush once a day which is in line with findings of Shailee et al.¹⁴ 17.5% students have reported to be brushing twice daily which is comparatively low than the 21.3% results reported by Sharva et al. in 2017. Lack of both parental and child oral health education might also explain these findings. The present study states that (22.3%) of students brush for more than 5 minutes, while (48.8%) students brush for 2–3 minutes and other group of students (28.9%) brush for 3–5 minutes daily. This indicates the lack of proper guidance on appropriate tooth brushing duration among students and parents of the rural regions.

Most of students (98.1%) use toothbrush and paste for brushing. This clearly indicates their awareness about oral hygiene. About negligible amount of students use finger or neem stick for cleaning their teeth, which is traditional method of cleaning the teeth in India. Nevertheless, the usage of these traditional methods is

decreasing. From this finding, it is evident that a better usage of oral hygiene aids were found among students in this study.¹⁵

Significantly, high (26.5%) students were using paste along the length of toothbrush bristles. Only 9% were using peanut size amount of toothpaste. This clearly illustrates that the students of particular age-group were uneducated about the quantity to be used. Also in hurry and urgent situation to brush the teeth at morning getting ready to school, more than 50% (64.5%) of children used little amount of toothpaste, which changed day to day.

The survey exhibits negative attitude of students (22.7%) toward brushing before bed. These students claim that brushing before bed has no importance in oral hygiene maintenance. The study by Sharmila et al. in 2020 stated that 80.8% were aware that caries affects appearance of tooth, whereas the present study reports only 51.23% students to have agreed that caries affects appearance; 26.5% have disagreed to the fact, whereas 22.3% ain't aware on the ill effects of caries.¹⁶

Study conducted by Priya et al. in 2013 quoted that 71.8% accepted the fact that overall health is related to oral and dental diseases; 50.7% of the current study population are not aware of the complications of dental problems being left untreated, hence proving that there is no awareness on the importance of good oral hygiene in the rural school population.¹⁷

CONCLUSION

From our study, we conclude that children had good knowledge on oral hygiene practices; however, few of them exhibited a negative attitude toward practice of recommended oral hygiene measures, which can be addressed in future by motivational programs on oral hygiene conducted in collaboration with the school authorities, teachers, parents, and children toward the betterment of their oral health.

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