

## Socio-behavioral factors and oral hygiene practices among school children - A descriptive study

P. Benly<sup>1</sup>, Meignana Arumugham<sup>2</sup>, Sheeja S. Vargheese<sup>3\*</sup>

### ABSTRACT

**Background:** The incidence of dental caries is about 73% among the school children in India and this can be attributed to socio-behavior factors such as dietary habits, improper brushing techniques, socioeconomic status, and oral hygiene practices. Proper oral hygiene maintenance and dietary habits can improve the oral health. However, the awareness about the oral hygiene practices should be improved. **Aim and Objective:** The aim of the study was to assess the socio-behavioral factors and oral hygiene practices among school children. **Materials and Methods:** The study was conducted among a private school. 100 children were included in the study. It was a questionnaire-based study containing 12 closed questions regarding socio-behavioral factors and oral hygiene practices. The data were tabulated and analyzed with descriptive statistics. **Result:** Based on the Kuppuswamy grading scale 76% of them belong to middle-class family. 93% of them used toothbrush for cleaning their teeth, 50% of the children brush twice daily, the frequency of changing the toothbrush once in 3 months was found in 59% of the children. 67% of the children had the habit of visiting the dentist only during a toothache, and 20% of them on parents advise. **Conclusion:** Majority of children were using a toothbrush for brushing, but many of them were not brushing at night times. Many of them were still having the habit of visiting dentist only during toothache. Hence, oral hygiene instructions should be given to them.

**KEY WORDS:** Brushing technique, Dental caries, Oral health, School children, Socio-behavioral factors

### INTRODUCTION

Dental caries is a major public health challenge in India due to its high prevalence and concomitant risks of other diseases.<sup>[1]</sup> The oral cavity has a multitude of functions, and poor oral health has thus the potential of hampering the quality of life.<sup>[2]</sup> Socio-behavioral factors may have an impact on oral health. Oral health education and promotion are considered as a priority for school children since they are at high risk for dental diseases predominantly dental caries and gingival diseases; at the age of mixed dentition. Health habits if thought early would last throughout the life. Oral health helps to maintain the health state of all the structures such as lips, teeth, gum, tongue and palate, good oral hygiene emphasis on cleanliness, and moisturizing of mouth structures. It gives a sense of well-being and also stimulates appetite. Brushing and

flossing and rinsing mouth could maintain good oral hygiene. Brushing cleans the teeth of food particles.<sup>[3]</sup>

Oral health habits are the measures that people learn and practice regularly to maintain good oral health or prevent oral disease. The knowledge, attitude, and oral health practices are the key factors in maintaining a healthy oral state. Behavioral factors such as improper brushing technique, family background, and knowledge about oral health may influence dental health.<sup>[4]</sup> The dietary habits may also have an impact on oral health. The most common oral diseases, dental caries and periodontal disease, are considered to be behavioral diseases because adoption of healthy oral habits is crucial in controlling them.<sup>[5]</sup>

The attitude of the parents toward oral health will create an impact on the children's oral health. Decreased food intake due to oral pain or poor dental status can affect the growth and nutritional status of children.<sup>[6]</sup> The main purpose of dental hygiene is to prevent the build-up of plaques. Poor oral hygiene allows the accumulation of acid producing bacteria

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<sup>1</sup>Department of Periodontics, Saveetha Dental College, Saveetha University, Chennai, Tamil Nadu, India, <sup>2</sup>Department of Public Health Dentistry, Saveetha Dental College, Saveetha University, Chennai, Tamil Nadu, India, <sup>3</sup>Department of Periodontics, Saveetha Dental College, Saveetha University, Chennai, Tamil Nadu, India

\*Corresponding author: Dr. Sheeja S. Vargheese, Saveetha Dental College, Saveetha University, Chennai, Tamil Nadu, India. E-mail: [drsheeja.rediffmail.com](mailto:drsheeja.rediffmail.com)

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on the surface of the teeth. The acid demineralizes the tooth enamel causing tooth decay. Increased prevalence of dental caries may affect the esthetics and self-confidence of the child. This, in turn, may affect the attitude toward academics and attribute to absenteeism to school. While poor dental status among children has a negative effect on speech development, it may also affect the social relationship with others.<sup>[7]</sup>

In developing countries like India, caries prevalence ranges from 31.5% to 89%.<sup>[8]</sup> Dental caries is one of the most important public health problems due to their high prevalence, their impact on the individual as well as society and the huge expense for the treatment. A significant relationship between parental education level and their children's oral health status has also been reported.<sup>[9]</sup>

Bonding to school represents an important area where bonding to positive adults can occur and has shown to "increase positive developmental experiences," "decrease negative developmental experiences," and "buffer the effects of risk." Thus, school bonding appears to promote healthy development and to prevent problem behavioral problems.<sup>[10]</sup>

Oral health conditions are known to affect various aspects of quality of life. Lack of oral hygiene can lead to various dental problems. Learning good habits in childhood will help them to follow healthy habits throughout their lifetime. School children can act as a catalyst in bringing about desirable changes in the family as well. It is the primary concern of oral health educators to impart positive oral health knowledge and behavior in the society. The above-said knowledge is obtained from health education and gets translated into behavior change. Behavior is the outcome when that action is sustained socio-dental indicators have been developed to assess the functional and psychological impacts of oral health on daily life.<sup>[11]</sup>

Recent studies have found that early childhood dental caries is prevalent among the school children and caries experience is also associated with their oral health-related behaviors, socioeconomic background, parental education, and dental knowledge. Oral health promotion through schools is recommended by the World Health Organization for improving knowledge, attitude, and behavior related to oral health and for prevention and control of dental diseases among school children.<sup>[12]</sup> The aim of the study was to assess the socio-behavioral factors and oral hygiene practices among school children.

## MATERIALS AND METHODS

This study was conducted among private school children and was a questionnaire-based survey. The total number of private schools in Nagercoil is 116

and one school among them was selected based on the random method. The sample size was calculated based on the study done in Chandigarh, on oral health attitudes among school children where they found 93.9% of children were using toothbrush for cleaning the teeth (Blaggana, 2016), the sample size was calculated using the formula:

$$N = Z^2 P(1-P)/d^2[13]$$

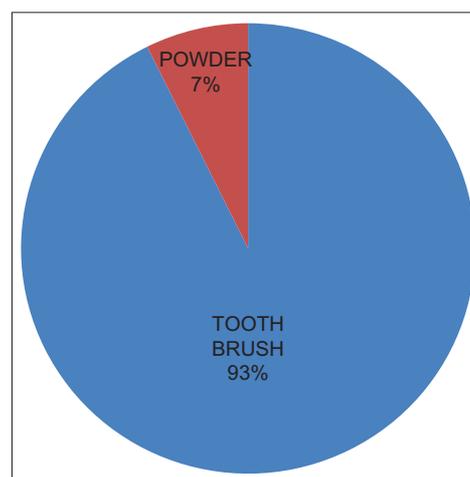
Where Z (Statistic corresponding to 95% confidence)=1.96,

P(Prevalence obtained from previous study)=93.9%<sup>[13]</sup>,  
d (Precision)=5%.

Based on the calculation the sample size required was 99.1. In this study, 100 children aged between 10 and 16 were selected. Informed consent was obtained from the parents and the children. All children took part in the study were invited to complete a structured questionnaire on socio-behavioral risk factors. The questionnaire was based on various socio-behavioral factors, knowledge about brushing techniques, awareness about oral health, and prior knowledge about oral health habits. The questionnaire was collected and the data were analyzed.

## RESULTS

The data were entered into the Excel sheet, analyzed, and graphically represented with the Bar diagram and pie chart. All the participants completed the survey. Based on the Kuppaswamy grading scale 76% of them belonged to the middle-class family, 93% of the children were using toothbrush to clean their tooth and 7% of them were using toothpowder to clean their tooth [Figure 1]. Among the children, 56% of them were having the habit of brushing once daily and 44% of them twice daily [Figure 2]. It was also found that 41% of them used to change their toothbrush once the bristles worn off and 59% change once in 3 months [Figure 3].



**Figure 1:** Different methods of cleaning the teeth.

Regarding the question on the reason for dental visit, 67% of them reported that they used to visit the dentist when their is toothache, 20% of them on parents advise and 13% of them visit as regular checkup [Figure 4]. 32% of them had a pleasant experience whereas 68% of them had a fearful experience during their previous dental visits [Figure 5].

On analysis of the question regarding the prior knowledge about correct brushing technique [Figure 6], 29% reported that they were taught the correct brushing method in school whereas 71% did not have any prior knowledge. While comparing the parent’s and the children’s brushing habit, 18% of parents and 31% of the children brush at night times and also found that 100% of the children whose parents had the habit of brushing at night time, also had the same habit [Figure 7].

## DISCUSSION

This study presented a view of oral health behavior, knowledge, and attitude of school children aged

between 10 and 16. In the present study, 76% of them belong to the upper middle-class family, 3% of the children uses toothbrush to clean their teeth, and 7% of them use powder to clean the teeth and similar to our study, a study conducted in 2001 shows that 88% of the children use toothbrush to clean their tooth<sup>[14]</sup> and another study shows that 93.9% of the children use toothbrush for cleaning their teeth.<sup>[15]</sup> A previous study involving school children showed that oral hygiene, gingival conditions, and dental caries have improved since the early 1990s although gingival disease and dental caries among children were found to be more prevalent.<sup>[16]</sup>

A study conducted among school children in rural area of Bangladesh revealed that the tooth-cleaning devices were mainly manual plastic toothbrushes which were more commonly used among 50.31%. A combination

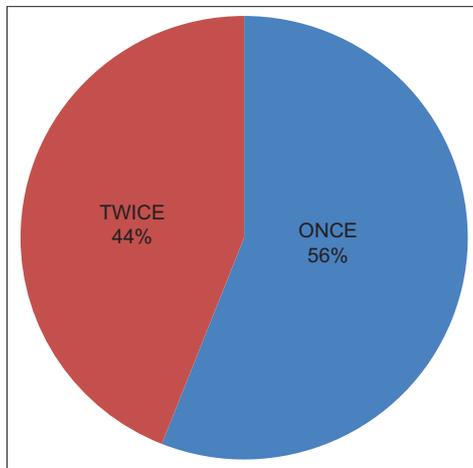


Figure 2: Frequency of brushing a day by the children

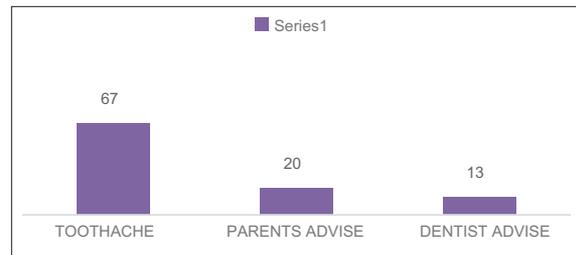


Figure 4: Reason for the visit to the dentist

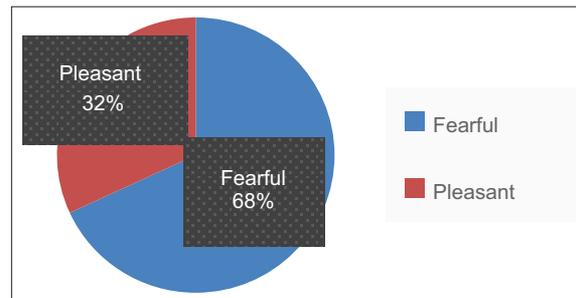


Figure 5: Experience of the child during a dental visit

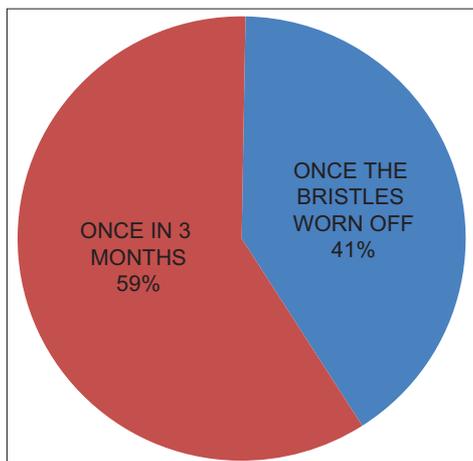


Figure 3: Frequency of changing the toothbrush

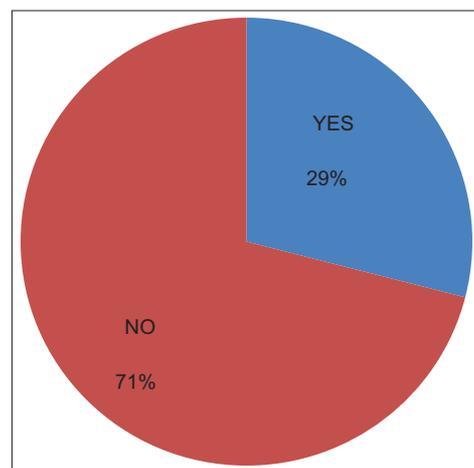
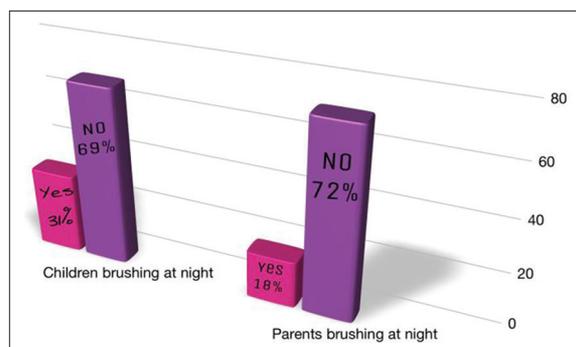


Figure 6: Prior knowledge about brushing habit in school



**Figure 7:** The habit of brushing at night by the children and their parents

of types, the plastic toothbrush and the chewing stick were mainly used in rural areas in about 27.40%, followed by the traditional chewing stick, “miswak” 14.86% and finger 7.43% was used by the children. The main method of tooth brushing was reported to be of horizontal strokes 97.23% and to a lesser extent, vertical brushing strokes 2.77%. The use of dental toothpicks was very high 82.43%, but the use of dental floss was negligible 17.57% in the rural population.

The present study shows that 56% of them brush once daily and 44% brush twice daily, while a study conducted in Chandigarh shows that 67% of them brush once daily, 33% of the children brush twice daily, and the results were comparatively similar to our study. From the study, it was evident that 67% of them used to visit the dental clinic only when there is toothache and 20% of them visit on parent’s advice and 13% of them as a regular checkup. Similar to our result, a study conducted in Kerala reported that 58.7% of children used to visit the dental clinic only for toothache and 14.7% of them visit due to parents advise.<sup>[17]</sup>

Another study conducted among school children in Chennai assessing the perception regarding the dental visit 46% of them felt that the dentist should be visited only when there is a problem. In the same study, 61% of them felt that their oral health was very good, 56% felt that dental health can affect the general health. Among those participants, 4% had the habit of visiting dentist regularly (once in 6 months)<sup>[18]</sup> and it was also reported that 72.5% of them had the habit of rinsing their mouth after having food or drink, whereas a study conducted by Anusha *et al.* in Chandigarh shows that 39% had the habit of rinsing their mouth after every meals, 30.3% of them rinse occasionally, and 32.7% never rinse their mouth. However, it is interesting to note in the same study that 81% brush twice daily.<sup>[19]</sup>

All these data revealed that there is a lot of variation in the oral hygiene practices among children in different parts of India also.

From the present study, it was also found that 32% of the children had a pleasant and peaceful experience during their dental visit and 68% of them had a fearful experience. Zhu *et al.* reported that 22% of them have a problem in smiling due to dental problems and this may have an impact in the behavioral attitude of the children which may further lead to absenteeism to school and their friendly behavior with the other children in the school.

The present study revealed that the knowledge about the oral health and oral hygiene practices were not taught in the schools as reported by 71% of the children and only 29% of them reported that they acquired knowledge about the oral hygiene practices from the school. Supporting our result a study conducted in Tiruchengode shows that prior knowledge about the oral hygiene practices was known to 63% of the children.<sup>[20]</sup>

A study conducted among school children in Jordan reported that 12% of parents had the habit of brushing at night times.<sup>[21]</sup> In our study, it was found that 31% of the children had the habit of brushing at night times and it was interesting to note that among the 31%, 18% of them stated that their parents were also had the habit of brushing at night times. This emphasises that parental behavior influences the children’s habit.

From the study, it was evident that most of the children used toothbrush for cleaning but nearly 50% of them were brushing twice daily. But still, it was alarming that the majority were visiting the dental clinic only when the problem arises and the majority had a fearful experience during their previous dental visit. Our study also proved that the majority of the children were not getting enough knowledge of oral care from the school and parents behavior influenced their oral habits.

## RECOMMENDATION

- Awareness programs on oral health to be planned for the school children and parents.
- School teachers to be deployed in an awareness program which should be incorporated in the school curriculum.
- Cost-effective measures in maintaining oral hygiene to be taught to the middle and lower class families.

## CONCLUSION

Only 44% of the children brush twice daily using toothbrush and toothpaste and two-third of the participants did not brush at night times. 22% of the children had compromised oral hygiene status, and among them, 76% of them belong to the middle-class families. Awareness about the oral hygiene practices

should be improved among children and knowledge should be provided by the teachers, community health professionals and by the parents, this will be helpful in improving the awareness about oral hygiene practices.

### Limitation and Future Scope

This study was conducted as a pilot project in a private school. Further studies with a larger scale of analytical in nature can be done with a larger sample size and regional representations of Tamil Nadu.

## REFERENCES

- Dixit LP, Shakya A, Shrestha M, Shrestha A. Dental caries prevalence, oral health knowledge and practice among indigenous Chepang school children of Nepal. *BMC Oral Health* 2013;13:20.
- Meera T. Self assessed dental status, dental anxiety of the patient and their oral hygienic behaviour. *J Pharm Sci Res* 2016;8:575.
- Singh A, Bharathi MP, Sequeira P, Acharya S, Bhat M. Oral health status and practices of 5 and 12 year old Indian tribal children. *J Clin Pediatr Dent* 2011;35:325-30.
- Jürgensen N, Petersen PE. Oral health and the impact of socio-behavioural factors in a cross sectional survey of 12-year old school children in Laos. *BMC Oral Health* 2009;9:29.
- Kumar RP, Nadar S. Oral health knowledge, attitude, and practice of patients visiting a private hospital in Chennai. *IOSR J Dent Med Sci* 2015;14:12-5.
- Al-Omiri MK, Al-Wahadni AM, Saeed KN. Oral health attitudes, knowledge, and behavior among school children in North Jordan. *J Dent Educ* 2006;70:179-87.
- Prabakar J, John J, Srisakthi D. Prevalence of dental caries and treatment needs among school going children of Chandigarh. *Indian J Dent Res* 2016;27:547-52.
- John J, Saravanan S, Kumar P. Dental caries experience and treatment needs among construction workers of Chennai city, India. *J Oral Health Res* 2010;1:118-23.
- Catalano RF, Haggerty KP, Oesterle S, Fleming CB, Hawkins JD. The importance of bonding to school for healthy development: Findings from the social development research group. *J Sch Health* 2004;74:252-61.
- Ganesh R, John J. A correlation between dental caries and dental impact on daily living: A cross sectional study. *Indian J Oral Sci* 2013;4:70.
- Reisine ST, Psoter W. Socioeconomic status and selected behavioral determinants as risk factors for dental caries. *J Dent Educ* 2001;65:1009-16.
- Blaggana A, Grover V, Anjali, Kapoor A, Blaggana V, Tanwar R, *et al.* Oral health knowledge, attitudes and practice behaviour among secondary school children in Chandigarh. *J Clin Diagn Res* 2016;10:ZC01-6.
- Pourhoseingholi MA, Vahedi M, Rahimzadeh M. Sample size calculation in medical studies. *Gastroenterol Hepatol Bed Bench* 2013;6:14-7.
- Rajab LD, Petersen PE, Bakaeen G, Hamdan MA. Oral health behaviour of schoolchildren and parents in Jordan. *Int J Paediatr Dent* 2002;12:168-76.
- Taani DQ. Relationship of socioeconomic background to oral hygiene, gingival status, and dental caries in children. *Quintessence Int* 2002;33:195-8.
- David J, Wang NJ, Astrom AN, Kuriakose S. Dental caries and associated factors in 12-year-old schoolchildren in Thiruvananthapuram, Kerala, India. *Int J Paediatr Dent* 2005;15:420-8.
- Anuradha P, Mishra G. Knowledge, attitude and practice of oral health among chicken-kari workers of Lucknow. *Public Health* 2011;2011:60-4.
- Zhu L, Petersen PE, Wang HY, Bian JY, Zhang BX. Oral health knowledge, attitudes and behaviour of children and adolescents in China. *Int Dent J* 2003;53:289-98.
- Peng B, Petersen PE, Fan MW, Tai BJ. Oral health status and oral health behaviour of 12-year-old urban schoolchildren in the people's republic of China. *Community Dent Health* 1997;14:238-44.
- Petersen PE. World health organization global policy for improvement of oral health-world health assembly 2007. *Int Dent J* 2008;58:115-21.
- Varenne B, Petersen PE, Ouattara S. Oral health behaviour of children and adults in urban and rural areas of Burkina Faso, Africa. *Int Dent J* 2006;56:61-70.

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