## **Original Research Article**

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# Knowledge, attitude and practice on oral hygiene among primary school children in an urban area of Kancheepuram district, Tamil Nadu

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#### **ABSTRACT**

**Background:** Oral health is fundamental to general health and well-being. To organize community oriented oral health promotion programs, systematic analysis of oral health is mandatory which includes information on oral health knowledge, attitude and practice (KAP). The study was done with the aim to assess the KAP on oral hygiene among primary school children in an urban area of Kancheepuram district, Tamil Nadu.

**Methods:** A sample of 250 primary school children in the age group of 8-10 at Anakaputhur, an urban field practice area of Sree Balaji Medical College and Hospital, Kancheepuram district was chosen by multi-stage sampling technique. Data on oral hygiene was collected by using a pre-tested semi-structured questionnaire by personal interview method. The data obtained was subjected to statistical analysis using SPSS version 22.

**Results:** Among the study participants, 65.6% of children had good knowledge on oral hygiene with only 33.6% of children with positive attitude and 10.8% of children had good practice of oral hygiene. Around 96 % of the children knew that they should brush their teeth twice daily, 92% of the children knew that having sweets/fizzy drinks causes oral health problems and 96% of the children think that maintaining healthy teeth is an individual responsibility.

**Conclusions:** Health education services at school regarding oral hygiene practices targeting the children, teachers and the parents have to be conducted at regular intervals to empower them on the benefits of the same.

Keywords: Dental health, Brushing teeth, Tongue cleaning, Mouth rinsing, Parental guidance

#### INTRODUCTION

According to the World Health Organisation (WHO), oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, tooth decay, tooth loss and other diseases and disorders that affect the oral cavity. Oral health remains a very sensitive and vital indicator of the general health and well-being of a person. The concept of oral health may seem trivial to us but, in reality, it is the most common problem that affects all the age groups. It has some serious implications causing pain, discomfort, disfigurement and even death in some cases. The global burden of disease 2016 enlightens us about the fact that half of the world population accounting for 3.58 billion people suffer from oral

diseases, out of which 2.4 billion suffer from caries of permanent teeth and 486 million children suffer from caries of primary teeth.<sup>4</sup> High sugary food, fizzy drinks, food habits, parental literacy and socio-economic status have all been associated with increased incidence of dental caries.<sup>5</sup>

According to a WHO fact sheet published in 2018 the prevalence of oral diseases will continue to rise in many lower and middle income countries like India in the upcoming years owing to dietary changes like increased consumption of sugars, heavy use of tobacco and alcohol etc.<sup>4</sup> Chronic oral disease can pose a risk for diabetes, cardiovascular diseases like stroke, respiratory diseases, low birth weight, preterm births.<sup>1</sup> Treatment of oral

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diseases is quite expensive and beyond the capacities of the health care systems in most lower- middle income countries. Access to primary oral health care in most countries is low as a consequence of disparate distribution of oral health professionals and a significant deficiency in appropriate oral health services. Only 35% of adults with expressed oral health needs are covered in lower-middle income countries. WHO recommends oral health promotion through school as the key strategy for improving knowledge, attitude and behaviour relating to oral health and for preventing and controlling oral diseases.<sup>4</sup> Oral health knowledge is considered to be essential prerequisite for health-related behaviour. 6 It well known fact that lack of oral hygiene practices leads to development of oral diseases. Oral self-care practices like timely brushing, flossing and periodic visits to a dentist should be developed from a very young age.<sup>7</sup>

Oral health care of young children can go a long way in promoting the health and general wellbeing of both the children and their families and is an essential prerequisite for health-related behaviour. In India more than 80% of children between 6-19 years are affected by dental caries in comparison with the more developed countries only a small fraction of Indian school going children have good oral hygiene. This is due to consumption of more snacks and beverages between the meals.

Majority of the health problems which affects the school children are preventable by promoting oral health care practices through health education by teachers who are the first contacts. Teaching children the importance of good oral care can install habits which will improve their health for a lifetime. Bearing all these aspects in mind a study was carried out to assess the knowledge, attitude and practices (KAP) on oral hygiene among primary school children in an urban area of Kancheepuram district, Tamil Nadu.

## **METHODS**

## Study design

This is a cross sectional descriptive study carried out in 5 selected schools of Anakaputhur, an urban field practice area of Kancheepuram district, Tamil Nadu.

#### Study period

This study was carried over a period of 4 months from April 2019 to August 2019.

#### Study population

Primary school children in the age group of 8-10 years at Anakaputhur, urban field practice area of Sree Balaji Medical College and Hospital, Kancheepuram district, Tamil Nadu were selected for the study with the intention that baseline data collected will be used for future planning of school oral health programs.

#### Study area

5 selected schools at Anakaputhur, an urban field practice area of Sree Balaji Medical College and Hospital, Kancheepuram district, Tamil Nadu.

#### Sample size

A study conducted by Kuppuswamy et al found the prevalence of brushing teeth twice daily among school children to be 17%. Since it is widely accepted as an important indicator of good oral hygiene, this was used to calculate the sample size using the formula  $4pq/l^2$ , where p=17%, q=83%, l=5%. Adding a non-response rate of 10%, the sample size thus obtained was 250.

## Sampling method

Multi-stage sampling method was used for selection of study participants. Out of the 20 schools in Anakaputhur, 5 schools were selected randomly. As the sample size was calculated to be 250, 50 students were selected randomly from each school in the age group of 8-10 years to get the required sample size.

#### Inclusion criteria

Children in the age group of 8-10 years who were willing to participate and those present on the day of the study and those parents who gave consent were included in the study.

### Exclusion criteria

Children who suffer from any mental ailment and children who were absent on the day of study were excluded from the study.

#### Data collection

Data was collected using pretested questionnaire on oral hygiene knowledge, attitude practices and presence of any oral problem among children. Assessment of oral hygiene was done by scoring system.

**Table 1: Scoring system for KAP.** 

No of	Good	Moderate	Poor
questions	>75%	50%-75%	< 50%
12	>9	6-9	<6
11	>8	6-8	<6
7	6-7	4-5	<4
	questions	questions         >75%           12         >9           11         >8	questions         >75%         50%-75%           12         >9         6-9           11         >8         6-8

## Statistical analysis

Data entry was done in Microsoft excel and analysis was carried out in SPSS version 22.

#### Ethical clearance and informed consent

The study was carried out after obtaining approval from the Institutional Ethical Committee of Sree Balaji Medical College and Hospital, Chrompet. The participants were briefed about the purpose of the study and informed consent was obtained prior to the data collection.

#### **RESULTS**

Total number of children participated in the study was 250.

Table 2 shows that among the study participants, 96% of the children knew that they should brush their teeth twice daily, 92% knew that sweets/fizzy drinks causes oral problems, 86% knew that regular tooth brushing will prevent oral problems and 84.8% knew that maintaining good oral hygiene can prevent tooth decay.

Table 3 shows that 96% of the study participants, agreed that maintaining healthy teeth is an individual responsibility, 95.6% of participants agreed that it's important to brush their teeth twice daily and 92.8% agreed that regular tooth brushing will prevent oral problems.

Table 2: Knowledge and awareness about oral hygiene (n=250).

Questions	Yes		No		Don'	Don't know	
	N	%	N	%	N	%	
Teeth is an important part of your body	222	88.8	18	7.2	10	4	
Oral health has an impact on general health	197	78.8	23	9.2	30	12	
We should brush our teeth twice daily	240	96	5	2	5	2	
Brushing your teeth regularly will prevent oral problems	215	86	22	8.8	13	5.2	
Irregular tooth brushing causes tooth ache	213	85.2	21	8.4	16	6.4	
Improper cleaning of tongue results in bad breath	180	72	23	9.2	47	18.8	
Sweets/Fizzy drinks causes oral problem	230	92	10	4	10	4	
Mouth rinsing after having meals, sweets and drinks prevents oral problems	179	71.6	17	6.8	54	21.6	
Maintaining a good oral hygiene prevents tooth decay	212	84.8	19	7.6	19	7.6	
Decayed/caries teeth affect the teeth appearance	202	80.8	45	18	3	1.2	
Dentist can relieve our tooth pain	234	93.6	11	4.4	5	2	
Dentist can help to keep your teeth in a healthy state	195	78	48	19.2	7	2.8	

Table 3: Attitude of school children towards oral hygiene (n=250).

Quartians	Yes		No	
Questions	N	%	N	%
Do you think it's important to brush your teeth twice daily?	239	95.6	11	4.4
Do you think brushing your teeth regularly will prevent oral problems?	232	92.8	18	7.2
Do you think improper cleaning of tongue results in bad breath?	206	82.4	44	17.6
Do you think poor oral hygiene prevents you from smiling & laughing with friends?	192	76.8	58	23.2
Do you think oral problems force you to miss school?	118	47.2	132	52.8
Do you think maintaining healthy teeth are an individual responsibility?	240	96	10	4
Do you think school plays an important role in maintaining oral hygiene?	119	47.6	131	52.4
Do you think regular visit to dentist is necessary?	150	50	100	40
Do you think dentist helps to maintain oral health?	208	83.2	42	16.8
Do you think your parents are the cause for your visit to dentist?	134	53.6	116	46.4
Do you think pain or discomfort is the only reason for you to visit a dentist?	135	54	115	46

Table 4: Practice of school children towards oral hygiene (n=250).

Pra	actice	Frequency (N)	%			
Do	you brush your teeth regularly?					
1	Yes	210	84			
2	No	40	16			
If r	If no, reason for not brushing regularly? (n = 40)					
1	Lazy	19	45.2			
2	Getting up late	6	14.3			
3	Don't like	17	40.5			
Ho	w often do you brush your teeth regularly?					
1	Once	127	50.8			
2	Twice	123	49.2			
Wł	at do you use to brush your teeth regularly?					
1	Toothpaste	192	76.8			
2	Toothpowder	28	11.2			
3	Both	30	12			
Do	Do you brush in front of your parents?					
1	Yes	78	31.2			
2	No	172	68.8			
Ho	w often you change your brush?					
1	Every month	145	58			
2	Every 2 months	44	17.6			
3	Every 3 months	7	2.8			
4	Every 6 months	54	21.6			
Do	you rinse your mouth after meals/sweets/fizzy drinks?					
1	Yes	116	46.4			
2	No	134	53.6			
Do	Do you clean your tongue regularly?					
1	Yes	140	56			
2	No	110	44			

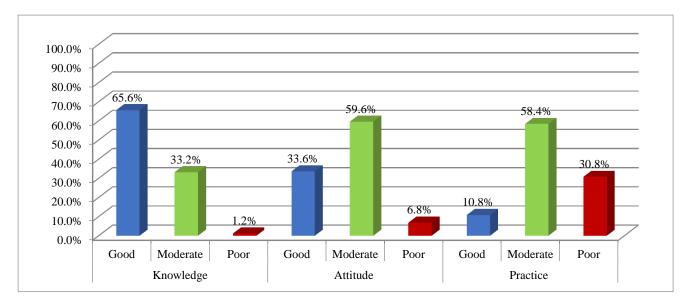


Figure 1: Distribution of children according to their level of KAP (n=250).

Table 4 shows that among the study participants, 84% of children brush their teeth regularly, 76.8% of children were using tooth paste to brush their teeth and 68.8% of children never brush their teeth in front of their parents. Nearly half of the children (49.2%) brush only once daily, 44% of the children did not practice tongue cleaning regularly and more than half of the children (53.6%) never rinse their mouth after having sweets/fizzy drink.

Figure 1 shows that among the children participated in the study, 65.6% of children had a good knowledge about oral hygiene, 33.6% of children had positive attitude towards personal hygiene and only 10.8% of children had good oral hygiene practice.

#### **DISCUSSION**

Oral health is an important component of general health. Childhood is a period where children develop knowledge toward hygienic practices and understand its importance in general well-being. It is the duty of parents, teachers as well as children themselves to know the importance of Oral hygiene. It is very important to start oral health education programs at school level for both children and their parents to create awareness about various oral problems due to lack of oral hygiene and enable them to have correct oral health practice.

In the present study 86% of the children knew that regular brushing of the teeth will prevent oral health problems. But in a study done by Vishnu et al in Marappadi 49.4% knew that regular brushing of the teeth will prevent oral health problems. Though the awareness is high in the present study, it is lower elsewhere, which shows that measures have to be undertaken to bridge the knowledge gap.

In the present study 92% of the children knew that having sweets/fizzy drinks causes oral health problems. Comparatively lower prevalence (76.5%) was found in a study done by Abdullah et al in Amman. With rapid modernization and urbanization, children are increasingly being exposed to sweets and fizzy drinks. Though the majority of the children were aware that sweets/fizzy drinks can affect the oral health, primary healthcare physicians must continuously expose the children and parents to the impact of sweets/fizzy drinks that can have on the oral health.

Around 96% of the children knew that they should brush their teeth twice daily whereas in a study done by Kuppuswamy et al in a rural area of Chennai 52% of the children were aware that they should brush their teeth twice daily. Around 78.8% of the study participants were aware that oral health had an impact on general health. But in a study done by Ahmed et al in Dawan 88.8% were aware that oral health had an impact on general health. Variations in the awareness of the healthy oral life style may have been due to the difference in the socio-demographic characteristics among the studies compared.

In the present study 65.6% of the children had good knowledge on oral health, 33.6% of the children had positive attitude and 10.8% of the children had good oral hygiene practice. Similarly 60% of the children had good knowledge on oral health in a study done by Yilkal et al in Ethiopia but better oral health attitude (66.6%) and practice (38.4%) was found among those children. 16

In the present study 96% of the children think that maintaining healthy teeth is an individual responsibility. Around 99.4% of the children think the similar way in the study conducted by Vishwanathaiah et al in Davangere. 17

In the present study 76.8% of the children think that poor oral hygiene prevents them smiling and laughing with friends. Comparatively lower prevalence (21.9%) was found in the study done by Harikiran et al in Bangalore. <sup>18</sup>

Around 46.45% of the children in the present study practiced mouth rinsing after having meals/sweets/fizzy drinks. But in a study done by Vishnu et al in Marappadi 72.5% of children practiced mouth rinsing. Mouth rinsing after meals, has been found to have beneficial effect on oral health by removing the loose food particles which if left in the oral cavity, can harbour bacteria which can affect the oral health of the individual. <sup>19</sup>

In a present study 31.2% of the children brush in front of their parents. Comparatively lower prevalence (23.3%) was found in the study conducted by Abdullah et al in Amman. Though it is seldom practiced in the country, parental supervision of their children's tooth brushing practices can help in a long way because, it is found that it can reinforce the importance of good oral health among the children on a daily basis which can in turn empower children to give importance to their oral health. <sup>20</sup>

In the present study, nearly half of the children (49.2%) responded that they brushed their teeth twice daily. Comparatively lower prevalence (17%) was found in the study done by Kuppuswamy et al in a rural area of chennai. Brushing teeth twice daily prevents most of the oral health problems. It is a known fact that, brushing teeth twice a day carries many benefits to children. It helps to maintain fresh breath, prevents gum disease, helps in removal of teeth stains and if practiced in the long run, it is also found to prevent cardiovascular diseases. <sup>21</sup>

#### **CONCLUSION**

This study show that nearly half of the children responded that they brushed their teeth twice daily and just more than half of the children clean their tongue regularly. This shows that health education regarding oral hygiene practice should be given at regular interval. Only one third of the children are monitored by the parents during brushing indicates that school oral health programs for both parents and children will improve the level of attitude and practice of the children towards oral health in near future. School teachers have to be empowered on the proper hygienic practices in maintaining oral health, so that they can teach the children which will in turn improve their attitude and practice on oral health.

#### Recommendations

It is interesting to note that even though majority of the participants had good knowledge, their attitude and

practice was only moderate when compared to the knowledge score. There is a wide gap between knowledge and the practice status of the children. In order to address these lacunae, regular school health programmes should be conducted reinforcing the practice of proper oral hygiene.

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