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Oral health perceptions and practices of children under parental care and children under foster care caregivers

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Abstract

Background: Oral health is fundamental to general health and well-being. Oral health diseases are the most common non-communicable disease affecting an estimated half of the world's population. In India, dental caries and dental trauma affect children and adolescents very often. Parents or a caregivers' knowledge, attitude and awareness have a great impact on maintenance of young children's oral health. It is evident that the more positive is the caregivers' attitudes toward oral hygiene, the better will be the dental health of their children. Infant oral health care is the foundation on which a lifetime of preventive education and dental care can be built up to help acquire optimal oral health into child and adulthood. This study was conducted to assess the oral perceptions and practices of parents and foster care caregivers toward their children's oral health and also to compare the knowledge, approach, and practices between parents and caregivers from foster care regarding general oral health and traumatic dental injuries.

Statistics: MS Excel (Microsoft Corporation, Redmond, WA, USA) was used to enter the information in a database. The percentage and frequency distributions for each answer was examined using SPSS version 28.0

Methodology: A self-structured questionnaire will be used to collect the data related to the knowledge among parents and caregivers from foster care regarding general oral health and traumatic dental injuries. The questionnaire was reviewed by experts and content validity was ensured. The questionnaire will be filled by all the participants in presence of investigators. The datas will be evaluated and statistically analysed.

Result: This study showed that foster caregivers perform better when it comes to oral health care practices, but parents score better on the awareness metrics. Both of them are almost equally aware of the dangers and causes of tooth decay.

Keywords: Self-structured questionnaire, awareness, Both

Introduction

Oral diseases are one amongst the most commonly affected public health obstacles worldwide that is striking people from all age groups ^[1]. Dental health, in accord with World Health Organization, is the state of the mouth, teeth, and orofacial structures that permits individuals to execute necessary functions such as eating, breathing, and speaking, and encircles psychosocial proportions such as self-confidence, wellbeing and the capacity to socialize and work without pain, discomfort and embarrassment ^[2]. Parents and foster care caregivers play a vital role in taking care of children's oral health. Oral health in children has an indispensable role as it places the basis for healthy permanent teeth ^[3, 4]. Parent's beliefs and attitude, parenting efficiencies and parenting styles along with social factors like socioeconomic status are important factors that influence a child's oral health ^[4, 5]. Most of the children registered in foster care centres are poor orphans and are forsaken by the society ^[6]. They often experience difficulties with their physical, emotional, oral health and general wellbeing when compared to children living in a typical family setting ^[6]. This may be due to the fact that there is lack of knowledge, interests, financial constraints, facilities like transportation and access to nutritious meals in foster care centres ^[7, 8, 9]. They often face frequent changes in caregivers and living environments which can lead to instability and gaps in consistent oral health maintenance ^[9, 10].

There is scarcity of documented research on the awareness of parents and foster care caregivers regarding children's oral health and hygiene. Hence, the objective of this research was to estimate and assess their degree of awareness, understanding and attitude regarding oral health.

Methodology

Analytical cross-sectional research was organized in the outpatient Department of Paediatric and Preventive Dentistry, Sathyabama Dental College and Hospital, Chennai and various foster care centres located in Chennai from March 2023 to April 2023.

Ethical approval was procured from the Institutional Review Board, and consent with full knowledge was secured from the study subjects. A self-directed questionnaire, corresponded in English and regional dialect (Tamil) was dispensed to the parents and foster care caregivers in person.

The questionnaire was a structured one consisting of two portions, first part accommodated the demographic data and the second part accommodated questions connected to awareness, understanding, attitude and practices regarding children's oral health. The total sample required was 80. 40 were parents and the other 40 were foster care caregivers.

The appropriately completed questionnaire was collected from the subjects on the same day. The collected responses were evaluated using a scoring criterion, where higher scores were assigned to the most accurate answers and lower scores to less accurate responses. A statistical analysis was subsequently conducted to analyse the data.

Statistical analysis was done using MS Excel (Microsoft Corporation, Redmond, WA, USA) to enter the details in a database. The percentage and frequency distributions for every response was surveyed using SPSS version 25.0. The chi square test was utilized to compare between the two study groups. The grade of statistical significance of p-value was kept at less than or equal to 0.05.

1. Name

2. Age

3. Gender

4. Address

5. Relationship to the child

a. Mother

b. Father

c. Grandparent

d. Guardian

e. Foster care caregiver

6. At which age the child's first tooth grew?

a. 6-10 months

b. 10-16 months

c. Don't know

7. Did you look after of the oral health of the child before the teeth came?

a. Yes

b. No

a) If yes, how was the oral cavity taken care of?

1. Using a clean wash cloth

2. Piece of gauze

b) What was the frequency of cleaning?

1. After every feed

2. Once in a day – morning

3. Once in a day – Night

8. Have you previously taken the child to a dentist?

a. Yes

b. No

9. What is the right age for your child to start brushing?

a. Just after the first tooth arises

b. Succeeding the eruption of all baby teeth

c. Don't know

10. What is the method you employ to brush the child's teeth?

a. Fingers

b. Finger brush

c. Toothbrush and toothpaste

d. Don't know

11. At what age the child started using a tooth brush and tooth paste?

a. Below 1 year

b. 1 year – 2 years

c. After 2 years

d. Don't know

12. Till what age the caregiver/parent assisted the child while brushing?

13. At what age the child started brushing on their own?

14. Brushing technique followed by the child

a. Circular motion

b. Up and down motion (vertical motion)

c. Side to side motion (horizontal motion)

d. Don't know

15. Frequency of tooth brushing

a. Once

b. Twice

16. How often should the toothbrush be changed?

a. Every 3 months

b. Every 6 months

c. When the bristles start to spread out

d. Don't know

17. Do you think eating too many sugary foods can cause cavities?

a. Agree

b. Disagree

c. Don't know

18. Food items that can cause teeth to decay

a. Chocolates/ Candies/ Sweets

b. Biscuits, Cakes

c. Fresh fruits and vegetables

d. Don't know

19. Teeth will get decayed if the baby sleeps with milk bottle all night.

a. Agree

b. Disagree

c. Don't know

The validity and reliability of the questionnaire was assessed using statistical tests

The questionnaire was provided to 10 participants in the speciality of Pediatric and Preventive Dentistry to assess if the questions were clear and relevant to obtain proper responses. Questions were reliable and hence no adjustments were made

to the questionnaire because it was easy for the participants to understand. Caregivers of foster care centres and parents finished the questionnaire on two distinct instances that were two weeks away. This interval of two weeks was contemplated adequate enough for participants to have bygone their replies but not adequate enough for a real difference to occur. Subjects were not instructed of the next administration of the questionnaire on the first instance. The replies in the first instance were used in evaluating construct validity. Two series of responses (i.e. the first and second instances) were utilized in estimating test-retest reliability. The correlation coefficient between the two sets of scores, administered two times, two weeks apart on the Rosenberg self-esteem scale was +.95. This indicated a good reliability.

Results

The caregivers surveyed were primarily divided into two groups, parents and foster care caregivers. From each of the mentioned groups, 40 individuals were surveyed. When asked about the age of a child's first tooth growth, the majority of parents (32.5%) and foster care caregivers (42.5%) reported that their child's first tooth grew between 6-10 months of age whereas 13.7% parents were uncertain about it. About 6.2% of foster care caregivers reported the first tooth growth between 10-16 months (Table 1).

Among all the parents, 33.8% of them responded affirmatively, indicating that they practiced oral health care of their child before the emergence of teeth. 42.5% of foster care caregivers was shown in taking care of oral health before teething, 16.8% of parents and 7.5% of foster care caregivers reported not having any opinion on the matter.

16.2% parents and 3.8% foster care caregivers reported not cleaning their teeth at all while 11.3% and 21.2% parents and foster care caregivers respectively responded by saying that they clean the child's teeth after every meal, and further equal percentage of parents and foster care caregivers (13.8%) admitted that they clean only once in a day in the morning while 8.7% and 11.2% respectively admitted to only cleaning once in the night.

A child's dental visit has an important part in determining their oral health journey. According to this study, 30% of parents and 43.8% of foster care caregivers have been proactively taking their child to a dentist while 19.9% of parents and 6.2% foster care caregivers have yet to arrange a dental visit and further analysis shows that 24.9% of parents and 17.5% of foster care caregivers believe that tooth brushing must begin instantly as the first tooth erupts. Furthermore, 17.4% of parents and 27.5% of foster care caregivers indicated that brushing should commence after every tooth has erupted while the rest were uncertain about it. 41.2% of parents and 31.2% of foster care caregivers preferred using toothbrush and toothpaste as a method to brush their child's teeth.

6.2% parents and 8.8% foster care caregivers believe that a child should start using a toothbrush and toothpaste below the age of one year while 22.5% of parents and 28.8% of foster care caregivers believe the age should be between 1 to 2 years while the rest of them responded that they believe a child should start using a toothbrush and a tooth paste after the age of 2 years.

When asked about the age till when the caregiver or parent assisted the child while brushing, it was noticed that the majority of caregivers (17.5%) said the age of 2, while 15% of the parents said it was at the age of 3. The data also shows that 11.2% of caregivers also assist children till the age of 3,

hence making 3 the most common age until which parents or caregivers assist the child in brushing.

However, the attitude of parents and caregivers on the age at which children should be able to brush on their own, most parents agree that the age should be between 4 and 5 years old whereas most caregivers say it should be at the age of 2. 20% of the parents expect their children to brush on their own at 4 years old and 17.6% at age 5. Whereas 17.5% of foster caregivers say it should be at the age of 2, and 12.5% say 3 to 3.5 years old.

10% of parents and 17.5% of caregivers say circular motion should be the child's brushing technique. While 21.2% of parents and 20% of caregivers believe that up and down motion (vertical motion) should be the child's brushing technique. 12.5% of both parents and caregivers think that side to side (horizontal) motion is the technique to be used, while 6.3% of parents admit to not knowing. It can be observed that when asked about their attitude regarding the frequency of tooth brushing, approximately 31.2% of parents and 16.2% of foster care caregivers reported the child's tooth brushing once, while 18.7% of parents and 33.8% of foster care caregivers stated the child's tooth brushing to be twice a day.

When asked about the frequency of changing toothbrushes both parents (26.2%) and foster care caregivers (23.8%) showed awareness of changing the toothbrush every 3 months. 12.4% parents and 6.2% foster care caregivers stated changing the tooth brush every 6 months. Furthermore, 8.8% of parents and 20% of foster care caregivers reported changing the toothbrushes only when the bristles start to spread out while the remaining participants were reported not knowing.

The majority of parents (46.2%) and foster care caregivers (47.5%) agreed that eating too many sugary foods can cause cavities, while a small percentage of parents (1.2%) and foster care caregivers (2.5%) disagreed with this belief and 2 parents (2.5%) were uncertain with the idea.

It is observed that a significant percentage of parents (27.4%) and foster care caregivers (45%) recognized chocolates, candies, and sweets as food items that can lead to tooth decay while only a small percentage of parents (2.5%) and foster care caregivers (3.8%) mentioned biscuits and cakes as potential contributors to tooth decay. Additionally, one foster care caregiver (1.2%) was unaware of the concept. Majority in both groups admitted to knowing that an infant who sleeps with a milk bottle at night will suffer from tooth decay.

Discussions

It can be seen that although the majority of parents know the correct age when their children's first tooth erupted, around 35% of parents need to be sensitised towards this. According to widely established dental practices, it has been acknowledged that early dental care has a huge impact on teeth development and in the avoidance of caries and other diseases^[11, 12]. Similar lacunae exist when it comes to the question of oral care before eruption of primary teeth. About one in three parents didn't seem to grasp its importance. Of the parents who did take care of oral health before teething, some didn't use the right material for the same. It is very concerning that 8 in 10 parents didn't clean their children's teeth after every meal. Early professional dental care is seen to have a positive effect on children adopting the right practices and thereby, their lifelong dental health. The AAPD suggests that parents should initiate a dental home for infants by 12 months of age^[13]. It serves to not only provide guidance

regarding oral development, but also check on fluoride status, oral hygiene, and form correct beliefs around teething, non-nutritive sucking habits and consequences of diet [12]. From this study, it can be observed that 4 in 10 parents admitted to never taking their child to a dentist. This seems to be arising from a certain apprehension towards paediatric dentists or from the popular myth that a dentist visit is required only in the case of pain and trouble.

The next focus of the study was on brushing habits, and caregivers awareness regarding the same. Alarming patterns have arisen here. 65% of foster care care-givers and 50% of parents didn't know that correct age for tooth brushing begins with the first tooth, as per the recommendations of The American Academy of Paediatric Dentistry (AAPD) in its current guidelines [14]. It asserts that cleaning teeth soon after they erupt aids in lowering bacterial colonisation. Tooth-brushing must be implemented for preschool children by a parent two times in a day, utilizing an age-suitable soft toothbrush. Flossing should start when proximal contacts evolve. [15] In this study, 1 in 5 parents and 2 in five foster caregivers

initially didn't use toothbrush and toothpaste for cleaning. Also, the majority of children from both groups didn't start brushing on their own by 2 years of age. Moreover, it is discouraging to see that 3 out of 4 caregivers didn't know the correct brushing technique. Again, half of the caregivers did not know to change their toothbrush every 3 months.

The American Academy of Pediatrics has proposed that children 1-6 years of age should ingest no more than 120-180 millilitres of fruit juice once daily from a drinking cup as part of snacks or main meal [16]. When parents and foster care caregivers were asked about the threat of cavities from eating sugary foods, 9 out of 10 caregivers knew about it. The results of this research were alike to the results of studies done by Moulana *et al.* [17] and Wyne *et al.* [18, 19].

On the question of babies sleeping with milk bottles all night, almost 70% of caregivers from both the groups knew about the danger of tooth decay. The AAPD commends that infants should not be put to bed with baby bottles and that breastfeeding at night should be evaded after the eruption of the first tooth [20].

Table 1: Frequency table of parents and foster care caregivers attitude

Age of child's first tooth growth		Parents	Foster Caregivers	p-values
6 - 10 months	Frequency	26	34	0.039*
	Percentage	32.5%	42.5%	
10 - 16 months	Frequency	11	5	
	Percentage	13.7%	6.2%	
Don't know	Frequency	3	1	
	Percentage	3.7%	1.2%	
Child's oral health care of before the emergence of the teeth		Parents	Foster Caregivers	p-value
Yes	Frequency	27	34	0.015*
	Percentage	33.3%	42.5%	
No	Frequency	13	6	
	Percentage	16.2%	7.5%	
Frequency of cleaning		Parent	Foster care caregivers	p-value
0	Frequency	13	3	0.026*
	Percentage	16.2%	3.8%	
After every feed	Frequency	9	17	
	Percentage	11.3%	21.2%	
Once in a day – morning	Frequency	11	11	
	Percentage	13.8%	13.8%	
Once in a day - Night	Frequency	7	9	
	Percentage	8.7%	11.2%	
Child's dental visit		Parents	Foster care caregivers	p-value
Yes	Frequency	24	35	0.005*
	Percentage	30%	43.8%	
No	Frequency	16	5	
	Percentage	19.9%	6.2%	
Frequency of tooth brushing		Parents	Foster care caregivers	p-value
Once	Frequency	24	13	0.008*
	Percentage	31.2%	16.2%	
Twice	Frequency	15	27	
	Percentage	18.7%	33.8%	
Sleeping with milk bottle cause tooth decay in babies		Parents	Foster care caregivers	p-value
Agree	Frequency	26	28	0.040*
	Percentage	32.4%	35.0%	
Disagree	Frequency	5	11	
	Percentage	6.2%	13.8%	
Don't know	Frequency	9	1	
	Percentage	11.3%	1.2%	

Conclusion

This study showed that foster caregivers perform better when it comes to oral health care practices, but parents score better on the awareness metrics. Both of them are almost equally aware of the dangers and causes of tooth decay.

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