Knowledge, Attitude, And Practices Of Parents Regarding Kid's Dentifrices In Sullia City, Karnataka, India-A Questionnaire Study

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Abstract

The study aimed to assess the Knowledge, attitude, and practices of parents regarding kid's dentifrices in Sullia city, Dakshina Kannada. A total of 152 questionnaires both in English and the local language (Kannada) were distributed randomly to parents of children aged 4-7yrs of age on parent-teacher day meet at the schools across Sullia city. Responded questionnaires were collected on the same day and responses obtained were tabulated and were expressed as frequency distribution and computed in percentages. Parents (57%) lacked knowledge of differences between adult & kids dentifrices, 53.1% did not prefer the use of kids dentifrices and 71% of the them used same adult dentifrices for their children; 46.9% preferred kids dentifrices in that 75.6% of them often changed the dentifrices. 73.6% of the parents dispensed the dentifrices for their children, but 62.5% of the parents were not aware of the exact amount of dentifrices to be used and 71.1% of parents used dentifrices half or full length of the toothbrush head. 86.1% of parents supervised the child's brushing and 86.9% raised concern that the child would swallow dentifrices. Brushing time reported was more than 5 minutes in 42.5%, 3-5 min in 38.3%, and less than 3 minutes in 19.2%. Parents used adult toothpaste for children and did not prefer kid's dentifrice as knowledge regarding the differences between adult and kid's dentifrices was less. Parents were not aware of the exact amount of dentifrice to be used according to age; they supervised the child's brushing but were concerned about dentifrice swallowing.

Key words: Kids Dentifrice Tooth Brushing Parent Supervision

INTRODUCTION

Children with caries in their primary teeth suffer three times more from caries in their permanent teeth than their peers of the same age. [1] An important aid for oral hygiene care is effective tooth brushing with dentifrice which helps in removing dental plaque which contributes to dental caries, inhibition of demineralization & enhancement of remineralisation at crystal surfaces inside the tooth, and inhibition of bacterial enzymes. In children, healthy and safe long-term tooth brushing practices include choice and correct amount of dentifrice, encouraging parent or caregiver supervision, encouraging proper spitting, and minimizing swallowing.

Among different types of dentifrices available, some of which are specially manufactured for children. The ideal dentifrice for children should be minimally abrasive with maximum fluoride availability and the ingredients present should not interfere with fluoride delivery along with a pleasant brushing experience.[2] Earlier European Academy of Paediatric Dentistry (EAPD) [3] and American Academy of Paediatric Dentistry (AAPD) [4] recommend using dentifrice with low fluoride concentrations (less than 500 ppm) for children who are below the age of six. But of late international recommendations advise using of 1000 ppm of fluoride for children under 6 years and up to 1500 ppm for older children to reduce the risk of fluorosis in developing permanent teeth.[5]

Researches are more concentrated on children who are below the age of six especially concerning the usage of fluoridated toothpaste [6,7] as they usually lack the fine manual dexterity required for carrying out brushing effectively and are also, inability in expectorating. Fluoride dentifrice ingestion and the risk of fluorosis in children are of concern and the risk is more in the first 7 years of life as compared to later years. [8]

Fluorosis affects the developing, unerupted, and erupted permanent teeth of children who are below the age of six years [9] which again affects the appearance of teeth and causes emotional disturbance. Other systemic effects of chronic fluoride ingestion include skeletal fluorosis of the bones and kidney damage. While there are important public health benefits of fluoride for preventing tooth decay [10, 11] excessive fluoride consumption can be dangerous, particularly among children.

Parental preference plays a huge role in choosing the type, frequency, and quantity of dentifrice which are used by children and their assistance is important to make sure their children's teeth were effectively cleansed and to avoid over-ingestion of toothpaste. Hence the present study aims at assessing the awareness of parents regarding kid's dentifrice and its usage.

MATERIALS AND METHOD

The present cross-sectional, descriptive study was carried out in Sullia city, Dakshina kannada district, Karnataka, India with information collected from the parents of children aged 4-7yrs. Permission to collect the information was taken from the school authorities and consent was obtained from the parents for the same. A pilot study helped in the determination of sample size and final questionnaire design.

SAMPLING TECHNIQUE & METHOD

The sample size was selected based on sullia taluk, Dakshina kannada district census 2011 [12] with an expected proportion of 0.7 with relative precision of 10% and 95% confidence level from the population. Samples were selected across various schools by cluster random sampling technique.

The sample size was 152 and questionnaires were distributed to parents across various schools in sullia city randomly on parent-teacher meeting. Only parents who were willing to answer the survey and gave written consent were included. Responded questionnaires were collected on the same day. Questionnaires were prepared both in English and the local language. First part of the questionnaire consisted of demographic details of the parent and the child; the second part included a survey related to knowledge, attitude, and practice regarding dentifrice used for their children, amount of dentifrices, brushing practice habits, and supervising their children's brushing.

STATISTICAL ANALYSIS:

Responses obtained were tabulated and the results of the questionnaire were expressed as frequency distribution and computed in percentages. Data were computerized and analyzed using the statistical package for the social sciences (SPSS 22).

RESULTS

The study comprised responses of 152 parents of which majority of them used commonly available brands in India and very few (10%) preferred herbal toothpaste for brushing. A majority of the parents (57%) lacked knowledge of differences between adult & kids dentifrices, 53.1% did not prefer the use of kid's dentifrices and 71% of the parents used the same adult toothpaste for their children; 46.9% preferred kids dentifrices in that 75.6% of them often changed the dentifrices. 73.6% of the parents dispensed the tooth paste for their children, but a majority (62.5%) of the parents were not aware of the exact amount of toothpaste to be used and 71.1% of the parents used toothpaste half or the full length of the toothbrush head. Parents around 86.1% responded that they would supervise their child's brushing and made their child brush twice daily but raised concern that their child (86.9%) would swallow toothpaste. Parents responded (42.5%) that brushing time was more than 5 minutes, in 38.3% of responses it was 3-5 min, and in 19.2% of responses it was less than 3 minutes. (table 1)

Table 1

s.no	Question	Response	
1.	Which Toothpaste do you use for brushing?	Colgate	21%(32)
		Pepsodent	28%(42)
		Close up	27%(41)
		Herbal toothpaste	9%(13)
		others	4%(6)
2.	Do you use the same toothpaste for your children?	YES	71%(108)
		NO	29%(44)
3.	Do you know the differences between adult tooth paste and kids tooth paste?	YES	57.8%(88)
		NO	42.1 %(64)
4.	Do you prefer kids toothpaste for your children?	YES	46.9%(71)
		NO	53.1%(81)
	If yes, do you often change the toothpaste		
	Yes	75.6%(53)	
	No	24.4%(18)	
5.	Do you know how much of the paste should be used for your child?	YES	37.5%(57)
		NO	62.5%(95)
6.	Who dispenses the toothpaste for your child?	Parent/ Guardian	73.6%(112)
		Child	26.3%(40)
7.	What is the quantity of paste does your child use?	Size of peanut	28.3%(43)
		Half or Full length of the toothbrush	71.7%(109)
8.	How many times does your child brush their teeth?	Once	72.3%(110)
		Twice	21% (32)
		More than two times	6.5% (10)
9.	Do you supervise your child in brushing?	YES	86.1% (131)
		NO	13.9% (21)
10.	Does your child swallow the toothpaste while brushing?	YES	86.9%(32
		NO	13.1%(20)
11.	For how much time does your child brush their teeth?	Less than 3 minutes	19.2% (29)
		3-5 minutes	38.3% (58)
		More than 5 minutes	42.5% (65)

DISCUSSION

One of the valuable tools for the assessment of children's conditions is the parental opinion and in the present study parental knowledge, awareness & usage of dentifrices and brushing habits & their supervision was assessed.

Based on the particular needs of children, kid's dentifrices have been developed and their differences with adult dentifrices include the type and level of surfactants, type of thickening gums, flavour, colour, and the amount of fluoride. The oral mucosal sensitivity and contact stomatitis are reported to rise as a result of different toothpaste ingredients such as abrasives, detergents, binding agents, humectants, preservatives, colouring agents, antiseptics, fluoride salts, and flavouring in sensitive individuals.[13]

Choice

In the present study majority of the parents (71%) used the same adult toothpaste for their children and 53.1% of the parents did not prefer the use of kid's dentifrices since the majority of them (57.8%) were not aware of the difference between adult and kids dentifrices. This may have detrimental effects on the child considering the concentration of the ingredients in the dentifrices which are more in adult dentifrices compared to that of kids. Child dentifrices are more tolerable for the oral mucosa cells [14] and it is important to make sure they do not use adult dentifrices which their parents use. [15] Mouth rinsing with water post-brushing is beneficial for children with sensitive mucosa, but another school of thought is that thorough rinsing after brushing should be avoided and spitting out excess toothpaste is usually sufficient [16] so that the effect of fluoride on teeth is maximised.

Amount

Factors that determine the amount of dentifrice to be used are: (a) child's age (a direct indicator of the development patterns of the teeth) (b) children's general and varied lack of knowledge and experience with spitting during their oral care routine [17] (c) child's oral hygiene (d) child's diet [3,4] (e) amount of fluoride in drinking water. [18]

Current guidelines of the American Academy of Paediatric Dentistry (AAPD) recommend teaching caregivers to use no more than a smear or rice-size amount of fluoridated toothpaste for children less than three years of age may decrease the risk of fluorosis. Using no more than a pea-sized amount of fluoridated toothpaste is appropriate for children aged three to six.[19] In the present study 73.6% of the parents dispensed the dentifrices themselves for their children, but they (62.5%) were not aware of the exact amount to be dispensed and 71.7% of the parents used around half or full length of the toothbrush head of dentifrice. Since current recommendations insist on using 1000-1500ppm for children to prevent dental caries, the

use of the advised amount would minimise ingestion of dentifrices which will prevent detrimental effects to the child's health including the developing teeth. In India, most of the kid's dentifrice commercially available like Kidodent, Cheeriogel, Pediflor, Colgate kids, and Colgate Barbie have fluoride concentrations of 450-550ppm which is below the recommended concentration and may have reduced cariostatic effect.

According to Corey H. Basch et al, the advertisements that depicted a picture of a toothbrush with toothpaste, 96.8 % depicted a full swirl of toothpaste covering the entire toothbrush head, which is well over the recommended amount. This power of a visual image versus printed information may result in parent's and children's use of dentifrices at levels higher than recommended, which may contribute to fluorosis, and in rare instances more excessive fluoride intake.[20] So it would be beneficial if the dentifrices manufacturer mention a visual image of an appropriate amount to be used suitable for the age.

Tooth brushing practise

Health education advice that promotes safe toothbrush practice habits includes using the correct amount of toothpaste, encouraging proper spitting, and minimizing swallowing [17,21] and encouraging parent or caregiver supervision of young children [22,23] may help promote healthy and safe long-term behaviours. In the present study, parents responded (86.1%) that they would supervise brushing but raised concerns about their child swallowing the dentifrices (86.8%). Young children ingested greater amounts of fluoride through tooth brushing than the older ones; mainly due to inadequate control over their swallowing reflexes.[24]

To achieve excellent oral hygiene and caries prevention for their children, parents would brush the child's teeth for a longer time as observed in the present study, 42.5% of the parents brushed their child's teeth for more than 5min and 38.5% for 3-5 min. As young children usually lack the fine manual dexterity required for carrying out brushing effectively and also have, an inability to expectorating, prolonged brushing may lead to fluoride ingestion and fluorosis. Parents must ensure that they supervise their children's tooth-brushing or brush their toddlers' teeth, especially by standing or kneeling behind the children in front of the sink or mirror. This is important, to avoid over-ingestion of toothpaste and to make sure that their children's teeth were effectively cleansed. [25, 26]

HAR do Nascimento et al stated that statistically significant association between the risk of fluorosis and the type of toothpaste. This result can be explained by the fact that kids' toothpaste is more attractive to children (flavors and colors) when compared to adults, leading to a more frequent use by children.[27] In the present study among parents who preferred kid's dentifrice, 75.6% of them mentioned that they changed dentifrice often which can be due to various sweet flavour and colours.

Hence efforts should be made about health education to parents, especially to those whose children are below 6yrs for safe tooth brushing practise which can have healthy and safe long- term results, also minimising detrimental effects of dentifrices.

CONCLUSION

1. Parents used adult toothpaste for their children and did not prefer kid's dentifrice as knowledge regarding the differences between adults and kids dentifrices was less.
2. Majority of the parents were not aware of the amount of toothpaste to be used but they practised supervising their children in tooth brushing.
3. Parents raised concern regarding swallowing of dentifrice.

CLINICAL IMPLICATIONS

Since awareness regarding kid's dentifrice is less, the dentist should emphasise parents and motivate them on the correct choice, and amount of dentifrice for beneficial effects to be used for children. Visual print regarding the amount of dentifrice based on age should be mentioned on toothpaste tubes for better parent awareness. Parents should be encouraged to supervise brushing with proper spitting of the dentifrice without swallowing but not to rinse immediately with water which may decrease the its anticariogenic activity of it.

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