



AWARENESS OF FLUORIDE DENTIFRICES AND FLUORIDE VARNISH AMONG MOTHERS

Dental Science

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ABSTRACT

Background: ECC prevalence of 44% has been reported in India among 8- to 48-mo-old and 40.6% among 0- to 3-y-old children, of whom 50.3% had non-cavitated surfaces and 49.7% cavitated surfaces. This high ECC prevalence is seen despite of major progress in the field of caries control over the past few decades. However topical fluoride like dentifrice and fluoride varnish continues to be a promising effective public healthcare strategies to control caries AS IT CAN ACT AS A CATALYST TO PROMOTE Dynamic balance between demineralizing and remineralizing factors to favour repair of the damaged hydroxyapatite crystal. It is proven that fluoride dentifrice and varnishes are some of the best vehicles to provide the daily required fluoride in lower concentrations to tackle the acid challenges in the child's oral cavity.

AIM: To evaluate the awareness of mothers about the use of fluoride dentifrices and fluoride varnishes.

Settings & Design: This was a questionnaire study in which mothers were asked to answer questions regarding fluorides evaluated for their awareness of fluoride dentifrices and fluoride varnish after obtaining informed consent.

Methods : This online survey was conducted among 185 mothers of children aged below 13 who were willing to participate in the study.

Statistical tests: Data regarding the study were entered to Microsoft Excel and analysed using IBM SPSS Statistics for Windows, Version 20 (IBM Corp., Armonk, N.Y., USA). Data were explored for normality using the Kolmogorov-Smirnov test.

Results: the level of awareness among mothers regarding fluoride dentifrices and varnishes is poor.

Conclusion: Mothers had a significantly lower awareness level regarding the effects of fluoride. Furthermore, the majority of the respondents were unaware of the benefits of fluoride in preventing dental caries. Mothers should have higher levels of awareness regarding oral health promotion to maintain optimal oral health in their children.

KEYWORDS

Awareness, Fluoride Varnish, Dentifrices

INTRODUCTION:

Dental caries is considered as one of the most common chronic disease in childhood. ¹The prevalence of dental caries in India among preschool children varies from 19.2% to 71.1%.² National Oral Health Survey 2002–2003 documented an average prevalence of 40.5% in Karnataka state and 40%–60% in the country.³ Initial caries is caused by oral microorganisms mainly caused by a sugar-rich diet. Poor oral hygiene or insufficient dental plaque removal leads to the rapid progression of caries. It leads not only to dental destruction and pain with children, but also adds to the burden of the caregivers.

The recommendations for fluoride toothpaste use in infants and children have been modified in recent years in an effort to maximize caries prevention, and minimize the risk of dental fluorosis.¹¹

Scientific evidence indicates that fluoridated toothpaste should be used as soon as the first tooth appears in the oral cavity.⁴ Fluoride is a mineral that occurs naturally in many foods and water, and can help oral health to a great extent by strengthening the tooth enamel, making it more resistant to dental caries. Effects of fluoride in preventing dental caries are primarily due to its topical effects after tooth eruption. The use of fluoride is connected with the fluoridation of drinking water and the high availability in toothpastes, oral rinses, and nutritional supplements with Fluoride.

In order to achieve the best oral health outcomes in children, parents are key persons in ensuring the wellbeing of young children.⁵ Low parental education, low socioeconomic status, and lack of awareness about the dental disease are some of the social risk factors. The negative attitude of parents generally reflect as a poor oral health in children and vice versa. The importance of fluorides in prevention of caries has to be focused upon. It is much important to assess the knowledge and awareness of parents about the incorporation of fluorides in form of dentifrices and varnishes for their children's oral health which will help the health providers to understand the reasons for development of oral diseases in children and failure to get them treated.

Although dental caries has been widely studied and preventive programs implemented in certain countries, developing countries like India is not able to provide quality healthcare to its underprivileged population .So it is the need of the hour to create an awareness among mothers about the preventive measures available for the better oral health of the growing children.

AIM:

To evaluate the awareness of mothers about the use of fluoride dentifrices and fluoride varnishes.

OBJECTIVES:

- To assess the knowledge of mothers about fluoride dentifrices and fluoride varnishes
- To know the acceptance of fluoride varnish and dentifrices among the mothers.
- To create awareness about fluoride varnish and fluoride dentifrices among mothers

MATERIALS AND METHOD:

Source of Data:

This online survey was conducted among the mothers of children aged below 13 who were willing to participate in the study

Sample Size:

Sample size for this study was estimated to be 185

Selection Criteria for Study Group:

Inclusion Criteria:

Mothers with children of age less than 13 years
Mothers who knows to read, write and understand English language

Exclusion Criteria:

Mothers who are not willing to participate.
Mothers who don't know English language.

Questionnaire Preparation

To assess the awareness of fluoride dentifrices and varnishes a questionnaire was prepared and sent to mothers through google forms and whatsapp.

Validity And Reliability Of Questionnaire

To make sure about face validity and content validity of the questionnaire, it was submitted to five members of pediatric dentistry faculty; for content validity, the questions were submitted to every expert to be surveyed. To grade the necessity of every question and proportion to the intended purpose, All the expert were asked to score every question according to the following pattern. Necessary question = 1, Useful but not necessary question = 2, Not necessary = 3, In addition, the experts were asked to write any opinion or recommendation.

Then, the answers were computed according to the following content validity ratio (CVR). $CVR = nE - N / 2N/2$

The number of experts who selected the question as a necessary one: nE The Total Number of Experts: N

After the answers of the experts were collected the questions, having CVR scores lower than 0.46 were excluded.

The number of questions in the primary questionnaire was 16, 4 questions were excluded after CVR review. The questions were finally approved by the experts. And eventually, the opinions of the experts were asked on face validity.

The questionnaire was pilot tested on 5 patients to evaluate the ease of understanding. To ensure the reliability of the questions on awareness of fluoride dentifrices and fluoride varnishes among mothers after pilot testing, the reliability was approved by Chronbach's alpha value. Finally, the validated questionnaire including 12 questions was prepared.

Table 1: awareness of mothers on fluoride dentifrices and fluoride varnishes among mothers

SL. NO.	QUESTIONS	YES n (%)	NO n (%)
1.	Have you heard about fluoride varnish and dentifrices	129 (69)	58 (31)
2.	Do you know about the role of fluorides in preventing caries?	124 (66.3)	63 (33.7)
3.	Do you know the different forms in which fluorides are available?	77 (41.2)	110 (58.8)
4.	Do you know the age at which	72 (38.5)	115 (61.5)
5.	Does the healthcare providers of your village inform you about fluoride varnish application to your child's tooth?	51(27.3)	136(72.7)
6.	Does your child use fluoridated tooth paste	118(63.1)	69(36.9)
7.	Will you allow doctor to apply fluoride varnish?	149 (79.7)	38 (20.3)
8.	Will you take your child to dentist to apply fluoride varnish biannually?	129 (69)	58 (31)
9.	Will you recommend fluoride varnish for kids of friends and relatives?	138 (73.8)	49 (26.2)
10.	Are you worried about fluoride varnish safety?	103 (55.1)	84 (44.9)
11.	Do you know that excess of fluoride leads to fluorosis	105 (56.1)	82 (43.9)
12.	Is your drinking water fluoridated	59 (31.6)	128 (68.4)

Statistical Analysis:

Data regarding awareness of fluoride dentifrices and fluoride varnishes among mothers were entered into Microsoft Excel and analysed using IBM SPSS Statistics for Windows, Version 20 (IBM Corp., Armonk, N.Y., USA). Data were explored for normality using the Kolmogorov-Smirnov test. Frequencies and percentages was assessed for all the questions related to awareness of fluoride dentifrices and fluoride varnishes among mothers

Graphs:

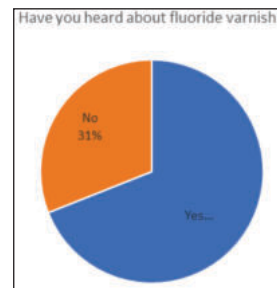


Figure 1

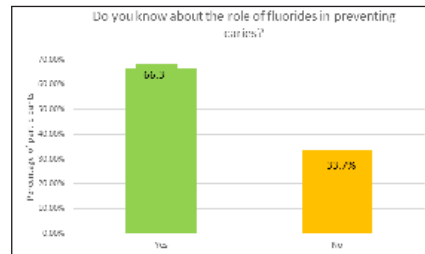


Figure 2:

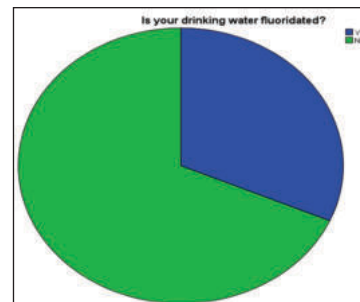


Figure 3:

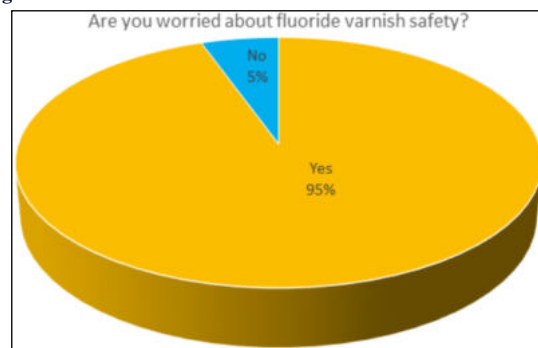


Figure 4:

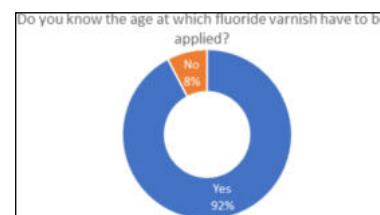


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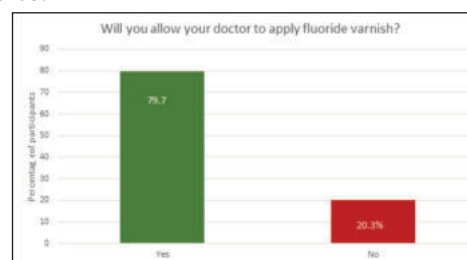


Figure 6:

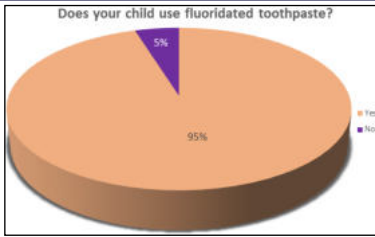


Figure 7:

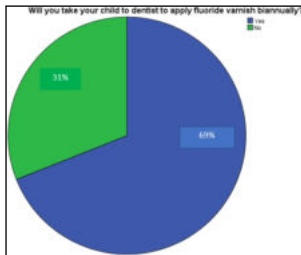


Figure 8:

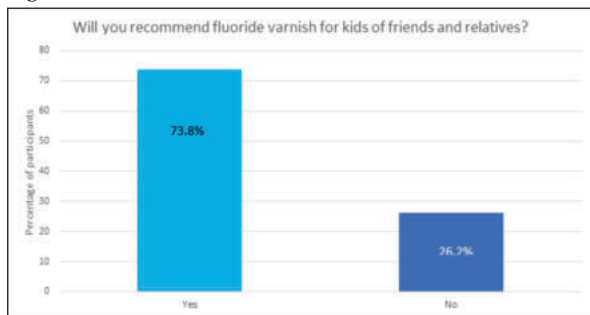


Figure 9:

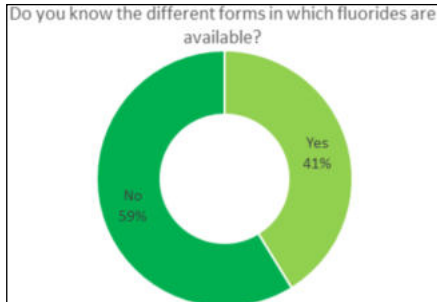


Figure 10:

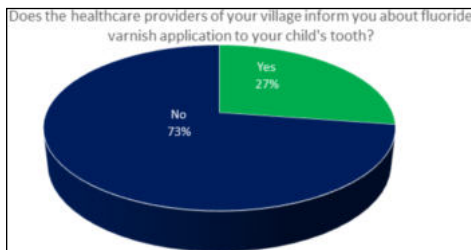


Figure 11:

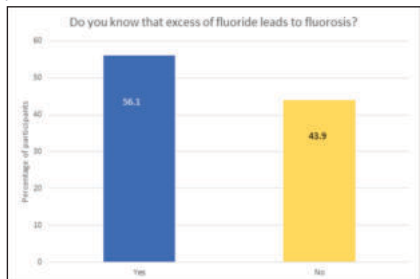


Figure 12:

RESULTS

A total of 187 mothers responded for the questionnaire prepared. Among them only 69% heard about fluoride varnishes. Only 66.3% of mothers were aware of the role of fluorides in preventing caries. Just 59 of the 187 mothers (31.6%) had their drinking water fluoridated. More than half of the mothers (55%) were worried about fluoride varnish safety. Most of the mothers (61.5%) knew the ages at which fluoride varnish was to be applied in their kids. 69% of the children did not use fluoridated toothpaste.

Majority of the mothers (79.7%) were ready to allow doctors to apply fluoride varnish and 129 mothers out of 187 (69%) were ready to take their children to dentists for fluoride application biannually. 73.8% of the mothers were willing to recommend fluoride to their relatives and friends but only 41.2% of the mothers knew the different forms in which fluoride is available.

The health care providers of villages of only 27.3% mothers informed them of the fluoride varnish applications. More than half (56.1%) of the mothers knew that excess fluoride leads to fluorosis but 43.9% did not know about it. The results are interpreted in the table given above and the graphs drawn along with it.

DISCUSSION

The most effective mode of administering fluoride is through the regular use of fluoride toothpastes.⁶ Knowledge about fluoride toothpaste among schoolchildren, parents, and schoolteachers has increased over the years. The majority of the parents were not able to correctly report whether the toothpaste that their children used contained fluoride, which was evident from their responses to questions pertaining to the presence of fluoride in the toothpaste used by their children.

In the study by Jensen *et al.*, knowledge, attitudes, and behaviour concerning tooth brushing and use of fluoride toothpaste were assessed in three age groups in a Swedish population.⁷ The results demonstrated that although participants had little knowledge about the reasons for and techniques of using fluoride toothpaste effectively, they described tooth brushing as important and the habit as a priority. Approximately half of the parents felt that the amount of fluoride toothpaste should be less than the size of a pea for children. These results are in accordance with those of a questionnaire study, in which 3200 individuals from two municipalities in Sweden were included.⁸

The majority of the respondents were unaware of the beneficial effects of fluoride in preventing dental caries. Many of those who were aware of these beneficial effects reported having gained this knowledge from their treating dentists, reinforcing the role of dentists in spreading awareness of the beneficial effects of fluoride among the population. Dental professionals should emphasize the appropriate use of fluoride to prevent caries while avoiding moderate/severe fluorosis.⁶

Furthermore, it is evident that the consumption of excessive fluoride is associated with acute and chronic toxicity. It affects several organs: Brain, bones, kidney, teeth, and thyroid.^{9,10}

Therefore it is high time to increase the awareness of parents especially mothers about fluoride varnishes and dentifrices and include them in daily oral practices of their children.

CONCLUSION

The level of awareness about fluoride and its effect on children's oral health is poor among parents especially mothers. Mothers had a significantly lower awareness level regarding the effects of fluoride. The majority of the mothers were not able to correctly report whether the toothpaste their children used contained fluoride. Furthermore, the majority of the respondents were unaware of the benefits of fluoride in preventing dental caries. Mothers should have higher levels of awareness regarding oral health promotion to maintain optimal oral health in their children.

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