

Original Research**Pediatricians views on primary preventive pediatric dental health care****Nilaya Reddy***Department of Pedodontics, SRM Dental College, Rampuram, Chennai***Address for correspondence****Dr. V. Nilaya Reddy**
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Adyar, Chennai - 20**Abstract****Introduction:** Pediatricians who provide primary care for children are considered to be in a unique position to provide dental preventive care to their patients. They are one of the first to encounter a direct relation with the child and hence play a vital role in providing information regarding prevention of any disease.**Aims & Objectives:** The purpose of this study was to assess the knowledge, attitudes, and beliefs of pediatricians towards preventive dental care in children.**Materials & Methods:** A questionnaire with questions pertaining to preventive dental care was distributed to 140 pediatricians. Their knowledge regarding preventive pediatric dental health care was assessed based on their responses.**Results:** Most of the Pediatricians were not aware of many aspects of preventive dental care and areas of great concern were identified. Overall, most respondents felt that their knowledge regarding pediatric dental care was inadequate ($P < 0.15$).**Conclusion:** Great emphasis should be laid on promoting preventive dental health care especially through pediatricians since they are the first to encounter children at a very early age.**Introduction**

Pediatricians are the first and most frequent health care providers to deal with infants and young children¹. They are in the position to make referrals to dentists as well as provide information about oral health care to parents.

Aims & objectives

The aim of this study was to:

Assess the knowledge, attitudes, and beliefs of pediatricians towards preventive dental care in child patients.

Methods

Questionnaires were distributed to 140 pediatricians in the city. Among the 140 distributed, 82 (58%) were included in the study and of the remaining 58 (42%), 15% were eliminated due to incomplete answers and 27% were not included due to their reluctance to participate in the study. The questionnaire contained multiple choice questions pertaining

to feeding practices, fluoride recommendation, role of milk teeth in prevention of future malocclusion, ideal age for the child's referral to a pediatric dentist and knowledge regarding diet counseling.

Results

The results were analyzed using Excel and SPSS.

Among the 82 participants in the study group, 34 felt they had good knowledge and 48 felt that they had a fair knowledge regarding preventive pediatric dental care and its relation to future oral health. All the 82 participants felt that they did have an important role in guiding the children to maintain good oral health as a part of general health although none had referred children so far as a routine to a pediatric dentist.

Source of referral: The family dentist was the source of referral according to 43 respondents, compared to 15 who responded as pediatric dentist, 13 as pediatrician and 11 as family physicians.

Recommendations about Dental Visits: Of the 82 respondents 18 (22%) recommended that the first visit of children to a dentist should be at the age of one, 39 (47.5%) felt that it should be at 3 years of age and 25 (30.4%) responded as having no idea regarding the first dental visit. None of the respondents gave a positive response as to visiting a dentist as soon as the first tooth erupts.

Nutritional counseling: Among the participants in the study, 76 pediatricians said that they sometimes provided nutritional counseling to their child patients whereas 6 said that they rarely do.

Feeding and Weaning: 24 respondents recommended weaning from bottle by the age of 12-18 months while 13 recommended it by the age of 19-24 months and 45 recommended weaning between 25-36 months of age.

Diet recommended at bed time: Water was recommended as the last diet that could be taken before going to bed in 2-3 year old children by 71 participants while 11 felt that it could be milk.

Fluoride Usage: Regarding the effect of Flouride on teeth, among the 82 participants, 17 felt that it has a detrimental effect, 53 felt that it has a beneficial effect and only 12 felt that it has both beneficial and detrimental effect based on the amount ingested. The source of fluoride according to 45 respondents was in the drinking water while 9 and 28 respondents felt it was in milk and other sources of diet irrespectively.

Milk teeth and their role in future dental health: Only 50 pediatricians in this study felt that the primary teeth were important in governing the future dental health in contrast to 32 who felt that the milk teeth had no role.

Knowledge of Oral Habits: A positive relation between the effects of thumb sucking and future alignment of teeth was suggested by 44 respondents whereas 38 felt that prolonged thumb sucking did not influence future alignment of teeth.

Based on their knowledge on preventive pediatric dental care, the pediatricians were categorized into two groups, the good and the fair category. Their responses to various questions were then analyzed and the significance was calculated between the two groups.

Q1. Does the pedodontist have a role in maintaining oral health?
Yes/no

- Q2. Who would you refer the child to in case of dental problem?
Pediatric dentist/general dentist
- Q3. Do you refer your child patient to a pediatric dentist for regular check up as a routine?
Yes/no
- Q4. What is the ideal age for the child's first dental visit?
When the first tooth erupts/1 year/3 years/no idea
- Q5. Do you provide nutritional counseling as a routine?
Always/sometimes/rarely
- Q6. When do you recommend weaning from bottle?
<12 months/12-18 months/18-24 months/25-36 months
- Q7. What is the ideal diet that you think the child can consume last before bedtime?
Fruit juice/breast milk/bottle milk/water
- Q8. Role of fluorides and its relation to dental health?
Detrimental/beneficial/both/no idea
- Q9. Your prescription for fluorides is based on?
Age/fluoride in water/adequacy of child's diet
- Q10. Do milk teeth have an effect on future alignment of permanent teeth?
Yes/no
- Q11. Does thumb sucking habit have an adverse effect on future alignment of permanent teeth?
Yes/no
- Q12. Do you feel your knowledge in pediatric dental health in PG curriculum was adequate?
Adequate/inadequate

Table 1: Responses of the pediatricians to the questionnaire

Question	Response	Good(n=34)		Fair(n=48)		p value
		Number	%	Number	%	
Q1	yes	34	100	48	100	-
	no	0	0	0	0	
Q2	Pediatric dentist	9	26.5	6	12.5	0.19
	others	25	73.5	42	87.5	
Q3	Yes	0	0	0	0	-
	no	34	100	48	100	
Q4	First tooth appears	0	0	0	0	-
	others	34	100	48	100	
Q5	Sometimes	30	88.2	46	95.8	0.23
	rarely	4	11.8	2	4.2	
Q6	12-18 months	17	50	7	14.6	0.001
	others	17	50	41	85.4	
Q7	Water	29	85.3	42	87.5	1
	Bottle milk	5	14.7	6	12.5	
Q8	Beneficial&detri mental	6	17.6	6	12.5	0.54
	Others	28	82.4	42	87.5	
Q9	Amount of fluoride in water	16	47.1	29	60.4	0.33
	others	18	52.9	19	39.6	
Q10	yes	23	67.6	27	56.3	0.42
	no	11	32.4	21	43.7	
Q11	yes	25	73.5	19	39.6	0.005
	no	9	26.5	29	60.4	
Q12	adequate	4	11.8	1	2.1	0.15
	inadequate	30	88.2	47	97.9	

Discussion

Pediatricians are most likely to see infants and young children during the formative years of oral health care. The results of this survey reveal that most pediatricians do not refer children to pediatric dentists. Literature from the AAP (American Academy of Pediatricians) in their web site for parents suggests that the first visit be around the age of 36 months or when all 20 baby teeth have come in^{2, 3}. The AAP also tells parents that the pediatrician will take care of the child's oral health care until then. This is in contrast to the AAPD guidelines that suggest the first visit be within six months of eruption of the first tooth as it is possible to discuss with the parents at this stage regarding preventive dental care and about what to anticipate during eruption of teeth.

The AAP has adopted the same guidelines as the AAPD for fluoride supplementation based on the patient's age and water levels of fluoride starting from 6 months of age². Although only 12 respondents rightly replied as fluorides having both beneficial and detrimental effect based on the total fluoride ingested and the others were not aware of the current guidelines.

Oral Habits such as thumb sucking, digit sucking, and pacifier usage are common in childhood. Review of dental literature on nonnutritive sucking and effects on developing dentition are minor in children under 3 years of age and recommend active intervention be encouraged at 4 years of age^{4, 5}. The reason for this being that the malocclusion caused due to prolonged thumb sucking can cause irreversible skeletal changes along with dental changes that may become difficult to treat later.

In the present study, 44 pediatricians/respondents felt that there is a correlation between the duration of thumb sucking and malocclusion while 38 felt that there is no such correlation.

The AAPD recommends that infant should not be put to sleep with a bottle and discourages ad libitum nocturnal breastfeeding after the eruption of the first primary tooth⁶. They also encourage infants to drink from a cup by the first birthday with weaning from the bottle by 12-14 months of age. Erickson P and Mazhari E⁷ in their study on investigation of role of breast or bottle milk in caries development have stated that milk intake with bottle at night during sleep can result in pooling of milk in the mouth which in turn can pave way for the development of caries in children. In contrast most pediatricians (45) in this survey recommended weaning only between 25-36 months of age.

Several animal studies have shown that teeth are among the most sensitive organs to the effects of dioxin¹². The most toxic dioxin congener 2,3,7,8 tetrachloro-dibenzoparadioxin arrests degradation and or removal of enamel matrix proteins in developing molars of rat pulps. As a pre-requisite for the completion of enamel mineralization is the removal of enamel matrix, this apparently leads to disturbance in mineralization¹³.

A similar study was carried out by Sanchez O et al⁸ where a questionnaire was mailed to 398 pediatricians and 632 family physicians licensed to practice in the state of Alabama. Overall, most respondents received 2 hr or less of preventive dental education during medical and specialty training. Pediatricians were better informed than family physicians in the areas of general dental knowledge and prevention counseling related to oral health ($P < 0.05$).

Although the pediatricians in this study were categorized into two groups based on their marking as to possessing good or fair knowledge regarding preventive pediatric dental care, neither group showed any significance in response to questions such as fluoride recommendation, nutritional counseling relationship between milk teeth and effects on permanent dentition, ideal age for the first dental visit or referral of the child dental patient to a pediatric dentist for regular check up. However significant differences were seen between the two groups in response to weaning from bottle ($p=0.001$) and effects of thumb sucking on future alignment of permanent teeth ($p=0.005$), with the pediatricians in the good category having a slight edge over the other group.

Thus it is clear that the pediatricians should have access to the AAPD recommendations and other additional education should be made available at continuing medical education and in medical school curriculum. The long term goal of universal knowledge in the areas of oral hygiene, fluoride usage, oral habits, feeding and weaning would promote greater oral health in all children.

Conclusion

The results of this study suggests that further clarification and expansion in the AAP guidelines regarding oral health care may be necessary for pediatricians to be more aware of oral health care needs. It also lays great emphasis on their need to understand their role in promoting preventive oral health care through early referral to pediatric dentists.

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