

# Cross-Sectional Evaluation of Awareness of Prevention of Dental Caries Among General Pediatricians in Ghaziabad District, India

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## Abstract

**Background:** Oral diseases are largely preventable and it is hoped that with the early exposure to oral health-care activities, the prevalence of oral diseases will be reduced in children and they would be more receptive to dental services. Aim: The present study evaluated the awareness of prevention of dental caries among pediatricians in Ghaziabad district, India. **Subjects and Methods:** A cross-sectional survey was undertaken among the pediatricians in Ghaziabad district, India. Total subjects including in the survey were 88 pediatricians, through systemic random sampling. Both the gender was including Male-37.8% (35/88) and Female-62.2% (53/88). Pre-tested, structured and self administered questionnaire was used in the survey and data analysis was done by using 'SPSS' software version 16.0 (IBM, United States). **Results:** Our study indicated that most of the pediatricians in Ghaziabad district had moderate knowledge 39.7% (35/88), followed by good knowledge 36.5% (32/88) and poor knowledge 23.8% (21/88) about dental caries. Practice guidelines and opinions of pediatricians in the survey were moderate 64.7% (57/88) in about more than half, followed by poor 23.8% (21/88) and followed by good 11.5% (10/88). The attitude for prevention of dental caries was positive in almost everybody 81.8% (72/88). **Conclusion:** The present survey concluded that pediatricians in Ghaziabad district, India had a good attitude and practices, but had moderate knowledge and lacked proper awareness about dental caries.

**Keywords:** Dental caries, Pediatricians, Prevention

## Introduction

Dental caries are probably the most common disease in the world. Although caries has effected prehistoric times, the prevalence of this disease has increased strongly associated with dietary change. Dental caries is an ecological disease in which the diet, the host and the microbial flora interact over a period of time in such a way so as to encourage the demineralization of the tooth enamel with resultant caries formation.<sup>[1]</sup> Oral health is an essential component of health,

the ability to chew and swallow is a critical function required to obtain essential nutrients for the body. Oral cavity harbors many virulent organisms it's also a gateway for many infections; therefore, oral hygiene is very much necessary for overall health.<sup>[2]</sup>

Untreated oral disease frequently leads to serious general health problems. Now-a-days due to mechanical life, the people are neglecting their oral health. It is necessary to create awareness about the dental caries and oral hygiene.<sup>[3]</sup> As oral diseases are largely preventable, it is hoped that with the early exposure to oral health care activities, the prevalence of dental diseases will be reduced in children and they would be more receptive to dental services.<sup>[4]</sup>

Dental caries continues to be a common chronic disease of childhood and has increased in the youngest age groups. Oral disease has implications beyond the mouth and can cause

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significant problems for children with other chronic diseases. Pediatricians receive very little education on oral health during their medical training and numerous barriers exist to incorporating oral health into practice.<sup>[5]</sup> Pediatricians are the first and only health professionals whom children visit and they are in a unique position to address dental disease in these children.<sup>[6]</sup> The pediatricians and family physicians have the responsibility to take the primary care for the child from birth to adolescence.<sup>[7]</sup> Dental caries can be prevented if the pediatrician recognizes and encourages good preventive habits and refers appropriately.<sup>[8]</sup> The aim of our study is to determine the awareness of prevention of dental caries among pediatricians in Ghaziabad district.

## Subjects and Methods

A cross-sectional survey was undertaken among the pediatricians in Ghaziabad district. Study duration was October-December 2012. The list of pediatricians in Ghaziabad was obtained from the Ghaziabad district society of pediatrics and ethical clearance was accompanied from the pediatrics society. There were 380 registered in this society. Out of this, 18 were not actively practicing, rest remaining was 362. One in every four was selected through systemic random sampling. Sample size was 90 and out of this two of them not responded to our questionnaire, final sample including in the survey was total 88 pediatricians with age of 30-34 years, 35-44 years, >45 years. Both genders, male-37.8% (35/88) and female-62.2% (53/88) were registered. After obtaining the informed consent of the selected pediatricians, they were made to answer the questionnaire. Pre-tested, structured and self administered questionnaire was used in the survey.<sup>[9]</sup> The questionnaire had questions to assess their personal details, knowledge about dental caries, attitude toward its prevention and practice guidelines and opinions. Data analysis was done by using 'SPSS' software version 16.0 (IBM, United States) Scores were given to each question in the knowledge, attitude and practice section. The maximum score was given to the correct answer and the minimum was given to the incorrect answer. Scoring criteria:<sup>[9]</sup> The scores are assessed as follows:

- <50%: Poor
- 50-75%: Moderate
- 75%: Good.

## Results

The survey was performed on 88 pediatricians, of whom the majority had 5-10 years of practice, seeing > 25 patients a day with a solo private practice [Table 1]. Both the gender is including male-37.8% (35/88) and female-62.2% (53/88) [Graph 1]. Interpretations revealed that up to 60.3% (53/88) of pediatrician felt the etiology of bottle feeding in developing dental caries [Table 2]. Other 29.6% (26/88) of the pediatricians knew that cavity causing bacteria can be transmitted from the mother [Table 2].

Almost 90.8% (80/88) of the pediatricians agreed that fluoride supplements and dental sealants prevent decay. Near about 69.4% (61/88) of the pediatricians felt that tooth brushing should begin after few teeth have erupted [Table 2]. Approximately 80.6% (71/88) of the pediatricians felt that 1 year would be ideal for the first dental visit [Table 3] and about 79.5% (70/88) counseled on the importance of tooth brushing. Almost 62.5% (62/88) of them examined the teeth for cavities [Table 3]. About 81.8% (72/88) felt that assessment of dental caries and 85.3% (75/88) felt counseling about prevention of it should be a part of well-child care [Table 4]. Near about 95.4% (84/88) of them agreed to have a role in promoting oral health and 55.7% (49/88) of them felt that the present curriculum in pediatric post-graduation is not enough to promote oral health-care [Table 4].

## Discussion

Despite the pronounced improvement of oral and dental status, dental caries is still a common dental disease. The factor, which almost affects the preventive dentistry performance is the knowledge and function of the medical group concerning

**Table 1: Personnel details of respondent**

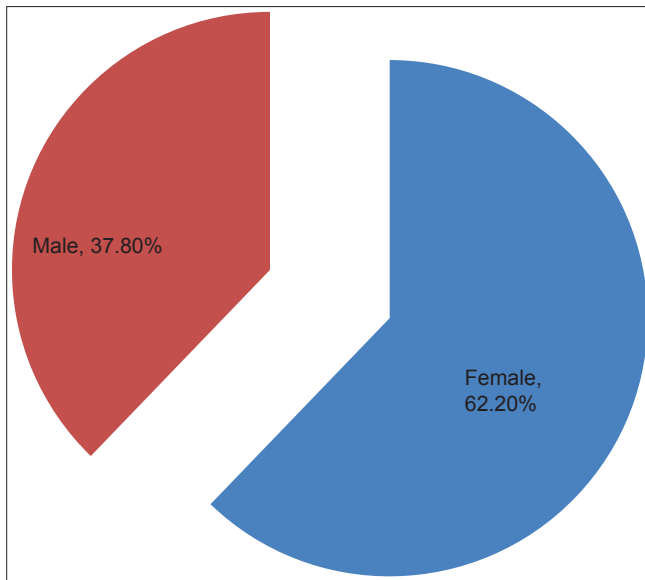
Parameters	Respondent %
Age group (years)	Respondent fraction in %
30-34 year	29.5
35-44	51.2
>45 year	19.3
Years in practice	Respondent fraction in %
<5 year	29.5
5-10 year	51.2
>10 year	19.3
Type of practice	Respondent fraction in %
Solo/private	61.3
Group/general hospital	26.2
Teaching/practice	12.5
Number of patients per day	Respondent fraction in %
<10 patient	5.6
10-25 patient	31.8
>25 patient	62.6

**Table 2: Knowledge about dental caries**

Particulars	True %	False %
Only bottle fed children can get dental caries	60.3	39.7
Cavity causing bacteria can be transmitted between mother and child	29.6	70.4
Fluoride supplements and dental sealants will help prevent decay	90.8	9.2

### Commencement of tooth brushing

After eruption of first tooth	After the eruption of all teeth	After the eruption of few teeth
23.8	6.8	69.4



Graph 1: Distribution of the study population according to gender

Table 3: Practice guidelines and opinion about dental caries

Dental visits	Clinical incidence outcomes in %
First dental visit	
6 months	11.5
1 year	80.6
On having any oro-dental problem	7.9
Frequency of dental visit	
6 months	11.5
1 year	64.7
On having any oro-dental problem	23.8
Examine teeth for dental caries	
Yes	62.5
No	37.5
Counsel of importance of tooth brushing	
Yes	79.5
No	20.5
Counsel on importance of oral health	
Yes	76.2
No	23.8

Table 4: Attitude assessment

Inquiry questions	Yes %	No %	Not aware %
Do you think pediatricians should have role in promoting oral health	95.4	4.6	
Should assessment of dental caries be a part of routine well-child care	81.8	18.2	
Should counseling on prevention of dental caries be a part of routine well-child care	85.3	14.7	
Is the current curriculum in pediatric post-graduation enough to promote oral health care	39.7	55.7	4.6

this issue.<sup>[10]</sup> In the same relation, a cross-sectional survey was completed to evaluate the awareness of prevention of dental caries among general pediatricians in Ghaziabad district, India.

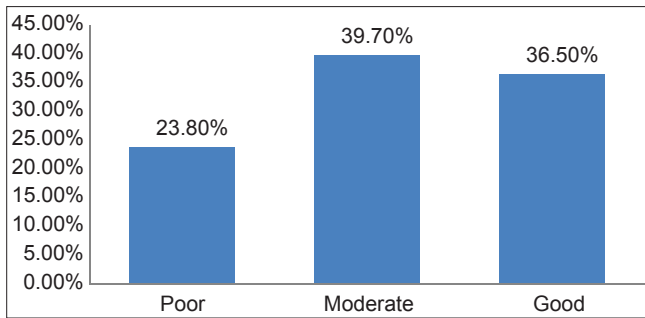
The improper feeding patterns like bottle feeding beyond 1 year, children put to bed with nursing bottle are responsible for an increase in the exposure of primary teeth to fermentable carbohydrates. This increase is likely to promote both an early colonization by oral mutans streptococci and an increase in the number of these microorganisms in the dental plaque and saliva, which increases the risk of developing caries.<sup>[11]</sup> 60.3% (53/88) of them felt that only bottle fed children get dental caries. However, there is an evidence to show that infants who sleep with the mother and nurse all night long have an increased risk of caries.<sup>[12-14]</sup> Though the standardized inter group comparison was not performed in the study due to small sample size, quantitative assessment of *P* value seems not to be feasible. Though, 29.6% (26/88) of the pediatricians knew that cavity causing bacteria can be transmitted from the mother.<sup>[14,15]</sup> 90.8% (80/88) of the pediatricians agreed that fluoride supplements and dental sealants prevent decay. Near about 69.4% (61/88) of the pediatricians felt that tooth brushing should begin after few teeth have erupted though American Academy of Pediatric Dentistry (AAPD) guidelines say that brushing should begin with the eruption of the first tooth.<sup>[16]</sup> Approximately, 80.6% (71/88) of the pediatricians felt that 1 year would be ideal for the first dental visit. This is in accordance with AAPD, which says that the first dental visit should be within 6 months of eruption of the first teeth.<sup>[16,17]</sup>

There is enough evidence to show that bottle to bed can cause dental caries. Approximately, 60.3% (53/88) pediatricians enquired about this and also 79.5% (70/88) counseled on the importance of tooth brushing. Almost 62.5% (55/88) of them examined the teeth for cavities. However, 81.8% (72/88) felt that assessment of dental caries and 85.3% (75/88) felt counseling about prevention of it should be a part of well-child care. Almost 95.4% (84/88) of them agreed to have a role in promoting oral health and 55.7% (49/88) of them felt that the present curriculum in pediatric post-graduation is not enough to promote oral health-care.

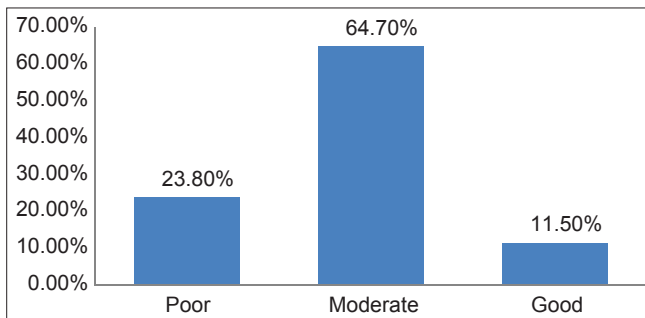
Our study indicates that most of the pediatricians in Ghaziabad district had moderate knowledge 39.7% (35/88), followed by good knowledge 36.5% (32/88) and poor knowledge 23.8% (21/88) about dental caries [Graph 2]. Practice guidelines and opinions of pediatricians in the survey were moderate 64.7% (57/88) in about more than half, followed by poor 23.8% (21/88) and followed by good 11.5% (10/88) [Graph 3]. The attitude for prevention of dental caries was positive in almost everybody 81.8% (72/88) [Graph 4].

## Conclusion

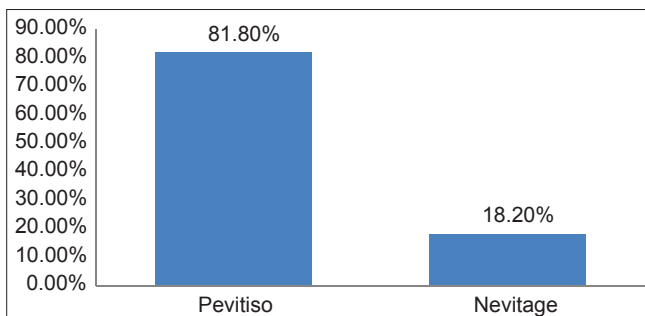
This survey indicates that pediatricians believe that they have an important role in the promotion of oral health. They also



**Graph 2:** Distribution of the study population according to knowledge of pediatrician about dental caries



**Graph 3:** Distribution of the study population according to practice guidelines and opinions about dental caries



**Graph 4:** Distribution of the study population according to attitude of pediatricians about prevention of dental caries

report encountering dental caries in their patients on a regular basis. Lack of knowledge with oral health issues may make it difficult for them to promote prevention of dental caries. The present survey concluded that pediatricians in Ghaziabad district had a good attitude and practices, but had moderate knowledge and lacked proper awareness about dental caries. They also compromised on providing good preventive dental care to the community.

### Recommendations

For the improvement of pediatrician knowledge about prevention of dental caries:

There should be good communication between pediatrician and dentist and should be encourage group practice with pediatricians. Advocate dentists to be part of well-child care. Established dental home along with medical home

and should be referral of cases to pediatricians regularly. Preventive dentistry topics should be included in the post-graduate curriculum of the pediatricians and there should be the arrangement of dental education program for the pediatricians by the help of seminars, brochures, posters, etc., Preventive dentistry articles to be published in medical journals. Collaboration with other child health professionals to improve children's oral health will make the job of the pediatrician easier.

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