

# Perception of Dental Students towards Infant Oral Health Care and Early Childhood Caries.

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## ABSTRACT

**Background:** Early childhood caries can lead to a higher risk of new carious lesions in both primary and permanent dentition, hospitalizations, increased treatment expenditure, risk for delayed physical growth and development, loss of school days with restricted activity, diminished oral health related quality of life and psychological distress to parents. Infant oral health is one of the foundations on which dental care and preventive education must be built to allow a lifetime opportunity free from preventable oral diseases. The purpose of this study was to determine the baseline knowledge and attitude of undergraduate dental students regarding early childhood caries and infant oral health and to propose ways to improve the undergraduate dental curriculum particularly in the prevention of Infant Oral Health diseases. **Methods:** A cross-sectional study was carried out among third and final year students of Government Dental College and Hospital, Srinagar, India in December 2019. Data was collected using a self-structured questionnaire. The questionnaires were entered into excel worksheet for cleaning and imported into Statistical Package for Social Sciences (SPSS) version 21.0 (SPSS Inc., Chicago, IL, USA) for analysis. **Results:** About eighty five (85 %) of students had a good knowledge about early childhood caries and infant oral health care. **Conclusion:** There is still a need to improve the knowledge of graduating dental students through effective strategies. They require adequate training in infant oral health care to be included in their curriculum.

**Keywords:** AAPD- American Academy of Pediatric Dentistry, ECC-: Early childhood caries, IOH- Infant oral health.

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## INTRODUCTION

The American Academy of Pediatric Dentistry (AAPD) emphasizes the importance of prevention, diagnosis and treatment necessary to restore and maintain the oral health of infants, children and adolescents. This is because of the intimate relationship between oral health and general health and the association between caries and mortality.<sup>[1]</sup>

Early childhood caries (ECC), formerly known as baby bottle decay, affects the primary dentition of those less than 72 months of age, and currently children ages 2 to 5 have approximately 30% untreated dental decay.<sup>[2]</sup> The consequences of ECC include a higher risk of new carious lesions in both primary and permanent dentition, hospitalizations, increased treatment expenditure, risk for delayed physical growth and development, loss of school days with restricted activity, diminished oral health related quality of life and psychological distress to parents.<sup>[3]</sup>

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Infant oral health (IOH) is one of the foundations on which dental care and preventive education must be built to allow a lifetime opportunity free from preventable oral diseases.<sup>[4]</sup> Therefore, integrating child oral health disease prevention and promotion strategies into the dental curriculum can improve access to appropriate dental health education and referring time for a dental intervention.

The purpose of this study was to determine the baseline knowledge and attitude of undergraduate dental students regarding ECC and Infant Oral Health and to propose ways to improve the undergraduate dental curriculum particularly in the prevention of Infant Oral Health diseases.

## MATERIALS & METHODS

A cross-sectional study was carried out among third and final year students of Government Dental College and Hospital, Srinagar, India in December 2019. Prior to conduct of study ethical clearance was taken from the college review board. Sixty third and final year students were enrolled for the study. Fifty seven questionnaires were returned back out of the sixty questionnaires distributed.

Data was collected using a self-structured questionnaire. The questionnaire was developed

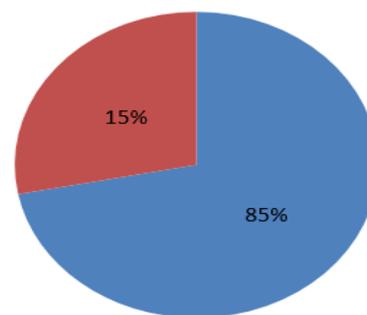
based on previous articles on the perception of ECC and infant oral health among medical and dental students.(5,6) A thirty closed ended questionnaires was distributed among the students after their scheduled lectures and was retrieved after 15 minutes. The questionnaires were divided into five parts. The first part contained questions on infant oral anatomy and chronology of tooth eruption. The second part assessed the knowledge of students about infant oral health care. The third part and fourth part assessed the knowledge about early childhood caries and use of fluoride and its effect on dental caries respectively while the fifth part assessed the attitude of students towards infant oral health care.

The questionnaires were entered into excel worksheet for cleaning and imported into Statistical Package for Social Sciences (SPSS) version 21.0 (SPSS Inc., Chicago, IL, USA) for analysis. A score of 1 was assigned for a correct response to a question while 0 was assigned for an incorrect response, “do not know” response or no response to a question. The sum of the scores was computed for each student. A score of  $\geq 50\%$  was described as good knowledge while a score of  $< 50\%$  was described as poor knowledge. Statistical significant was set a  $P < 0.05$ .

### RESULTS

About eighty five (85 %) of students had a good knowledge about early childhood caries and infant oral health care. Chronology of tooth eruption was known by almost seventy eight (78%) of students. Eighty one (81%) of students gave the correct response to time a mother should start cleaning a child’s teeth and the amount of paste to be used. Sixty nine (69%) of students had knowledge about the number of visits to a dentist and the right age to wean a child.

With regards to the etiology of dental caries, 93% agreed that that night time bottle feeding can cause dental decay. Ninety one (91%) of students gave the correct response to knowledge about the teeth affected by early childhood caries and use of fluorides.

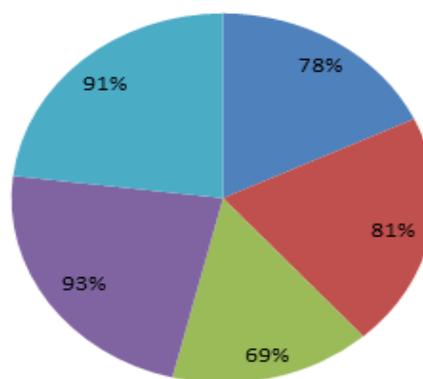


■ Good Knowledge ■ Poor Knowledge

Knowledge score of the students on infant oral health

**Table 1: Percentage of correct responses in each group**

Correct Responses	Dental students
Group I	78%
Group II	81%
Group III	69%
Group IV	93%
Group V	91%



Percentage of correct responses in each group

Perception Of Dental Students Towards Infant Oral Health Care And Early Childhood Caries Questionnaire					
<b>General information</b>					
Name: (optional):					
Age:					
Gender:					
Educational qualification: .....					
<b>Infant oral anatomy and chronology of tooth eruption</b>					
1	What is the normal age at which baby’s first tooth appears in the mouth?	6-8 mon	8-12 mon	12-16 mon	Don’t know
2	Which is the first tooth to erupt in a baby	incisors	molars	canines	Don’t know
3	Complete set of baby teeth contains how many teeth	10	15	20	Don’t know
4	At what age is the set of baby teeth complete	9-12 mon	12-24 mon	36-40 month	Don’t know
5	Which teeth are not present in the deciduous dentition	premolars	Molars	Canine	Don’t know

6	Which teeth erupt at 6 years of age	canine	premolars	molars	Don't know
<b>Infant Oral Health Care</b>					
7	Is the oral cavity of newborn free of bacteria	Yes	No	Don't know	
8	Should the baby be put to bed with milk/juice	Yes	No	Don't know	
9	Should the baby be allowed to use a sweetened pacifier while teething	Yes	No	Don't know	
10	When should a mother start cleaning her child's teeth?	When the first milk tooth erupts	When all milk teeth have erupted	When the first permanent tooth erupts	Don't know
11	What should be used in cleaning babies' teeth?	Cotton wool and toothpaste	Cotton wool and salt	Soft toothbrush and toothpaste	Don't know
12	What is the amount of toothpaste should be placed on a child's toothbrush?	Smear	Pea size	Half the length of a toothbrush	The entire length of a toothbrush
13	When should be the child's first dental visit?	When there is toothache/tooth decay?	On or before the age of 1 year	When all the baby teeth have erupted	Do not know
14	How often should a child visit the dentist?	Once a year	Twice a year	When a dental problem is noticed	Do not know
15	Right age to wean a child from breastfeeding is from 6 to 8 months	Yes	No	Don't know	
16	Right time to introduce the child to drink from a cup	6 month	1 year	11/2 year	2 year
<b>Early Childhood Caries (ECC)</b>					
17	Dental caries is a multi-factorial disease	Yes	No	Don't know	
18	Only bottle-fed babies are affected by early childhood tooth decay	Yes	No	Don't know	
19	Bacteria that cause early childhood tooth decay can spread from mother to child	Yes	No	Don't know	
20	Night time bottle/breast feeding can cause tooth decay	Yes	No	Don't know	
21	Early tooth loss causes malocclusion and hampers growth	Yes	No	Don't know	
22	Causative organism of dental caries	Lactobacillus	Streptococcus mutans	Both	Don't know
23	Early childhood caries first affects	Maxillary incisors	Mandibular incisors	Molars	Don't know
25	ECC can develop as early as the first tooth erupts and cavity can be visible by 10 months of age	Yes	No	Don't know	
26	Cessation of demand feeding should be stopped after the first tooth has erupted in the oral cavity	Yes	No	Don't know	
<b>Use Of Fluoride And Dental Caries</b>					
27	Does fluorides decrease dental caries	Yes	No	Don't know	
28	Can fluoride tooth paste be used for toddlers	Yes	No	Don't know	
<b>Attitude Towards Infant Oral Health Care</b>					
29	Do you think it is important to treat milk teeth	Yes	No	Don't know	
30	How important do you think it is for a child to see a dentist at an early age?	Very important	Important	Not important	Don't know
31	How important do you think it is for you to be taught recommendations of child's oral health?	Very important	Important	Not important	Don't know

## DISCUSSION

Caries results from an overgrowth of specific organisms that are part of normally occurring human oral flora. Mutans streptococci (MS) are considered to be a principal indicator group of bacterial organisms responsible for dental caries. In our study majority of students had the knowledge that the causative organism for early childhood caries (ECC) is *Streptococcus mutans* as compared to 10% by Kumari RN et al.<sup>[7]</sup> A large percentage of students agreed that counselling about weaning and night time feeding is important for the mothers as compared to only 60% by Shivaprakash PK et al.<sup>[8]</sup> In regard to knowledge about use of fluorides 91% respondents knew that use of fluorides decreases

dental caries as compared to only 4% by Kumari RN et al.<sup>[7]</sup>

Most of the students had a good knowledge about infant oral health care. However the knowledge of final year students was good as compared to third year students. This may be due to more clinical exposure of final year students.

AAPD recommends that, the child should see the dentist within 6 months of eruption of the first primary tooth and no later than 12 months of age so as to educate parents on oral hygiene, prevention of dental injuries and ECC. Students had a good knowledge about the first dental visit of a child and its importance.<sup>[9]</sup>

## CONCLUSION

There is still a need to improve the knowledge of graduating dental students through effective strategies. They require adequate training in infant oral health care to be incl.

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