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Knowledge and attitude on infant oral health among graduating medical students in kulasekaram

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Abstract:

AIM: This study was intended to evaluate the knowledge and attitudes regarding infant's oral health care among graduating medical students from Kulasekaram, Tamil Nadu.

MATERIALS AND METHODS: A cross-sectional survey research design was employed in this study. Self-administered questionnaire of the validated "Graduating medical students' Knowledge and Attitudes Survey Regarding Infant's oral health care" were utilized to ascertain the baseline levels of knowledge and attitudes of graduating medical students' in Kulasekaram hospital. In this regard, a preliminary study with a convenience sample of 100 medical students was conducted so as to assess the knowledge of infant oral health care among graduating medical students in Kulasekaram. This study, while limited in sample size, benefits the general practitioners as target readers to assess the abnormalities in children at early stages of life.

RESULTS: The results of the study revealed that the mean percentage score overall was 65.7%. Only 3.2% of participants obtained a passing score of 80% or greater. Widespread knowledge deficits and poor attitudes among graduating medical students were noted in this study, particularly in the domain of pharmacological management of pain. Positive correlations were observed between the respondents' score and level of education. Further analysis revealed respondents had an inaccurate self-evaluation of their pain management knowledge.

CONCLUSION: The results of this study reveal that there is dearth of knowledge and attitudes of graduating medical students' regarding infant oral health care. Educational and quality improvement initiatives in oral health care of infants could enhance medical student's knowledge baseline in the area of oral health care and possibly improve practices.

Keywords:

Dental problems, infant oral health, medical graduates

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Introduction

Awareness pertaining to the infant oral health care in this constantly evolving world is critical for medical practitioners to ensure that they have a unique advantage in their profession. It is a universal perception that medical professionals have adequate knowledge pertaining to infant oral health.^[1] Generally, medical professional are the first health professionals to come in contact with the parents and their infants. Hence, a comprehensive knowledge pertaining to the

infant oral health is essential incorporating oral health disease prevention and promotion strategies particularly in infants who suffer disproportionately from dental diseases and who have limited access to dental care.^[2]

Dental caries is the most common chronic infectious disease during childhood which is caused by interaction between cariogenic bacteria and tooth surface.^[3] Literature suggests that the infant is more susceptible between 19 and 31 months.^[4] Caries in the primary dentition is considered as a risk factor for the future dental caries in

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the permanent dentition.^[5] Caries in primary teeth can affect children’s growth, result in significant pain and potentially lifethreatening infection, and diminish overall quality of life.^[6] Considering the fact that the medical healthcare professionals more likely to encounter new mothers and infants than the dental professionals, it is essential that they are aware of the infectious etiology and associated risk factors. Hence, the present study was intended to evaluate the knowledge and attitudes of graduating medical students towards infant oral health.

Materials and Methods

A cross sectional survey was undertaken to evaluate the knowledge and attitudes of graduating medical students towards infant oral health at Sree Mookambika Institute of Medical Sciences, Kulasekaram, Kanyakumari district, Tamil Nadu in the year 2019. The study included 200 Graduating medical students comprising of one hundred students from the final year and one hundred students from internship. Prior to commencing the study an Institutional Ethical committee clearance was obtained. A self-administered questionnaire with twenty three items was distributed to these students. The students were instructed to answer the questionnaire by using either the right or wrong options as shown in Table 1. After collecting the filled questionnaires, participants were given instructions about infant oral health care and doubts if any were cleared. Survey questions were aimed to assess the facts regarding infant dental anatomy, early childhood caries (ECC), maternal oral health and ECC, preventive strategies on ECC and use of fluorides. The survey forms were evaluated and critically analyzed.

Results

It was observed that 83% of the respondents were unaware of the causative organism for dental caries. 81% of the respondents were unaware that dental caries is transmissible form the mother. 92.5% of the respondents felt that counseling to prevent ECC in infants during the antenatal period is not required and 79.5% of respondents felt that counseling on feeding and weaning practices is not required to reduce the incidence of ECC. 63% of the respondents were unaware as to when to schedule the first dental visit for an infant. Most of the respondents were unaware that the deciduous dentition does not have premolars and only 38% knew the association between natal teeth and Riga-Fede disease.

It was observed that 81% of the respondents were aware that fluorides decrease dental caries. However, 88.5% of them were unaware of the beneficial level

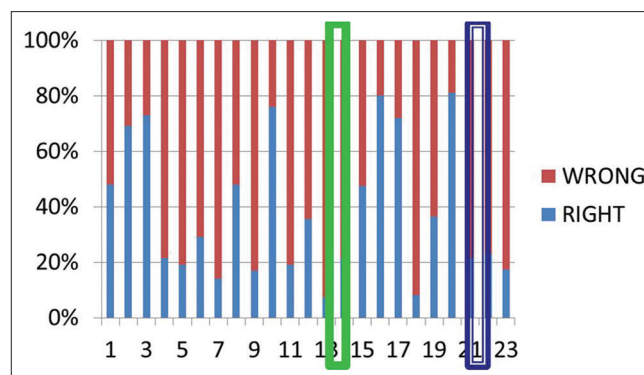
of fluoride in water. Majority of the respondents were aware that most common dental disease in infants is dental caries, the first tooth to erupt is the lower central incisor and that the gumpads need to be cleaned.

The results of this study reveal that there exist a poor knowledge and neglect among the graduating medical students pertaining to the maternal association and ECC. However, the knowledge about infant dental anatomy among the graduating medical students appears to be fair as shown in Graph 1. The results obtained for the study are depicted in Table 2.

Table 1: The questionnaire used in the study

Type of question
1. Dental arches of new born are called as? - Gumpads
2. First tooth to erupt? - Lower central incisor
3. Natal teeth are present? - At birth
4. Tooth not present in deciduous dentition? - Premolar
5. Natal tooth causes which syndrome? - Riga-fede disease
6. Is the oral cavity of newborn is free of bacteria? Yes
7. Cessation of demand feeding? - After eruption of first tooth
8. Etiological factor of ECC? - Prolonged breast feeding
9. Causative organism of dental caries? - <i>Streptococcus mutans</i>
10. Most common dental disease? - Dental caries
11. Is dental caries is transmissible from mother? Yes
12. Will poor maternal gum health lead to low birth weight baby? Yes
13. Is counseling to prevent ECCs in infants in antenatal period needed? Yes
14. Can counseling on feeding and weaning practices decrease ECC? Yes
15. Should gum pads be cleaned? Yes
16. When should tooth brush be first recommended? - After the first tooth erupts
17. Best time to brush the teeth? - Morning
18. Can tooth paste be used below 2 years? YES
19. First dental visit? - 6-12 months
20. Do fluorides decrease dental caries? Yes
21. Beneficial level of fluoride in water? 1 ppm
22. Is corporation water fluoridated? No
23. Can fluoride tooth paste be used for toddler? No

ECCs=Early childhood caries



Graph 1: The percentage of right and wrong answers as answered by the graduating medical students in the questionnaire

Table 2: Results of the questionnaire against appropriate questions

Type of question	Right (%)	Wrong (%)
1. Dental arches of new born are called as? - Gumpads	96 (48)	104 (52)
2. First tooth to erupt? - Lower central incisor	138 (69)	62 (31)
3. Natal teeth are present? - At birth	146 (73)	54 (27)
4. Tooth not present in deciduous dentition? - Premolar	43 (21.5)	157 (78.5)
5. Natal tooth causes which syndrome? - Riga-fede disease	38 (19)	162 (81)
6. Is the oral cavity of newborn is free of bacteria? Yes	58 (29)	142 (71)
7. Cessation of demand feeding? - After eruption of first tooth	28 (14)	172 (86)
8. Etiological factor of ECC? - Prolonged breast feeding	96 (48)	104 (25)
9. Causative organism of dental caries? - <i>Streptococcus mutans</i>	34 (17)	166 (83)
10. Most common dental disease? - Dental caries	152 (76)	48 (24)
11. Is dental caries is transmissible from mother? Yes	36 (19)	164 (81)
12. Will poor maternal gum health lead to low birth weight baby? Yes	71 (35)	129 (65)
13. Is counseling to prevent ECCs in infants in antenatal period needed? Yes	15 (7.5)	185 (92.5)
14. Can counseling on feeding and weaning practices decrease ECC? Yes	43 (21.5)	157 (79.5)
15. Should gum pads be cleaned? Yes	160 (80)	40 (20)
16. When should tooth brush be first recommended? - After the first tooth erupts	95 (47.5)	105 (52.5)
17. Best time to brush the teeth? - Morning	144 (72)	56 (28)
18. Can tooth paste be used below 2 years? Yes	16 (8)	184 (92)
19. First dental visit? - 6-12 months	73 (36.5)	127 (62.5)
20. Do fluorides decrease dental caries? Yes	160 (81)	40 (19)
21. Beneficial level of fluoride in water? 1 ppm	43 (21.5)	157 (88.5)
22. Is corporation water fluoridated? No	46 (23)	154 (77)
23. Can fluoride tooth paste be used for toddler? No	35 (17.5)	164 (82.5)

ECCs=Early childhood caries

Discussion

Oral health is an essential aspect of general health and an impaired oral health in infants can have significant negative consequences in their general health in addition to the social, intellectual, physical, and emotional development.^[7]

Parents are considered to the main source of early education in children with regard to a good oral health. However, an increasing trend of nuclear families coupled with a busy competitive professional life is leading to change in the parenting trends. This increases the responsibility of the health care professional to educate the parents pertaining to infant oral health.^[8] Even though the mothers had a positive attitude toward oral care of the infants, due to lack of adequate knowledge, they were not able to provide appropriate oral hygiene care for their infants.^[9] American Academy of Pediatric proposed numerous recommendations on expanding the role of pediatricians in preventive oral health. Pediatricians need adequate training in oral health in medical school, residency, and in continuing education courses. It recommends adding a module on oral health and dental care to the undergraduate medical school, physical examination skills courses, and an oral health rotation to pediatric residency curriculums.^[10]

Though it is a well-known fact that dental caries is the most common chronic disease of childhood literature

suggests that most children do not receive dental care until they are at least 3 years old.^[11] It is documented in the literature that by this age more than 30% of the children from lower socio-economic group have already had dental caries.^[12]

A study by Lewis *et al.* reported that many respondents were unaware of the first signs of tooth decay.^[13] This is in accordance with our study. Sánchez *et al.* reported that 83% of physicians performed oral examinations during children's physical examinations.^[14] Only few studies in the past have reported examining the teeth and counseling parents compared with the study by Lewis *et al.* many studies in the past have revealed that pediatricians and family physicians receiving little training in oral health.^[13-15] This is in accordance with our study.

Lack of training and unfamiliarity with oral health issues may make it difficult for primary health care providers to assume a more active role in the oral health promotion of children.^[16] A randomized controlled trial suggested continued medical education (CME) to address this gap.^[17]

A study showed that the awareness level regarding the importance of the first dental visit is very low in the Indian population, with an average age of the child's first dental visit being at 3–6 years of age. The most common reason for seeking dental care at the first visit is found to be pain and dental caries.^[18] The results of this study

conclude that although the medical professionals are the first health care professionals in contact with the parents and their infants, they lack awareness and knowledge pertaining to oral health. This necessitates the need for family practitioners and other primary health care providers to acquire additional information before they can assume a pivotal role in the early detection of oral diseases.^[19,20]

In developing countries like India, where there is a deficiency of pedodontists and other dental personnel particularly in the rural areas, the delivery of infant oral health care is compromised. To overcome these problems, it is mandatory to educate the medical and health care professionals about infant oral health care. This would improve access to dental care, especially for the poor and the minority children who suffer inexplicably from dental caries and who have limited access to dental care.

Conclusion

Based on the results of this study it can be concluded that graduate medical students lack adequate knowledge pertaining to infant oral health. Hence, there is a definite need to enhance the knowledge of medical students through effective strategies. The knowledge of the medical practitioners pertaining to infant oral health needs to be enhanced so that they can impart infant oral health counseling; provide anticipatory guidance to parents; and also serve as a guide in developing positive dental attitudes. This can be achieved only through a joint advocacy between the two professions.

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Conflicts of interest

There are no conflicts of interest.

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