



Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/12236

DOI URL: <http://dx.doi.org/10.21474/IJAR01/12236>



RESEARCH ARTICLE

TO ASSESS THE KNOWLEDGE, ATTITUDE AND PRACTICES AMONG THE GYNECOLOGISTS REGARDING THE INFLUENCE OF PERINATAL MATERNAL ORAL HEALTH IN DETERMINING THE FUTURE DENTAL HEALTH OF THE CHILD

Dr. Joby Peter, Dr. Vijai S., Dr. Krishna Kumar and Dr. Tinet Mary Augustin

Manuscript Info

Manuscript History

Received: 31 October 2020

Final Accepted: 30 November 2020

Published: December 2020

Key words:

Perinatal Oral Health, Infant Oral Health, Gynecologists, Pediatricians, Expectant Mothers, Multidisciplinary Approach, Pedodontist, Preventive Measures, Pedodontist

Abstract

Background: Perinatal and infant oral health should be considered as the foundation of Pediatric preventive oral health care. A proper perinatal oral health care guidance provided by Gynecologists during the time of pregnancy can help an expectant mother to improve or maintain good oral health status and thereby reduce the complications that can be associated with poor oral health in the mother and can indirectly dictate the future oral health and general health of her child. Gynecologists who are aware about the infectious nature of the oral microbes and the effect of discrete periods or windows of inoculation should instruct the mother about the higher risk of developing dental caries in their children by the modification of maternal dental flora using proper perinatal preventive programs. Aim: To assess the Knowledge, Attitude and Practice of Gynecologists of Central Kerala about the importance of early oral health care for children.

Materials and methods: A questionnaire based cross sectional survey was conducted among 200 Gynecologists from Ernakulam and Thrissur district, Central Kerala, India. After obtaining the consent and explaining the nature of the study, a single investigator distributed the questionnaire among the randomly selected participants and requested to answer within 15-30 minutes. The answered sheets were collected back on the same day itself.

Result: A statistical evaluation using the Chi-square was done to evaluate the homogeneity of the respondents and one way ANOVA to evaluate the influence of study parameters on categorical scale. Mean percentage score of each category was evaluated. The result showed that the Gynecologists had a good attitude towards child oral health related topics but a less score was obtained for the knowledge and practice category.

Conclusion: Majority of the participants from the study advocated the need of improving their knowledge regarding the child health related topics in future to fill their knowledge gap so that they can effectively devote time and effort to inspect oral health of the child. Gynecologists preferred CME (Continuing medical education) and their respective journals for the purpose. An improvement in the multidisciplinary approach of Pedodontists was advocated to implement a positive attitude among these contributors so that they can perform preventive

measures in the most effective and efficient way to nurture a caries free smile in a child's future.

Copy Right, IJAR, 2020,. All rights reserved.

Introduction:-

The American Academy of Pediatric Dentistry (AAPD) recognizes that perinatal and infant oral health are the foundations upon which preventive education and dental care must be built to enhance the opportunity for a child to have a lifetime free from preventable oral disease 1

Dental caries remains as one of the most prevalent oral disease affecting the human population and despite the implementation of various preventive techniques and strategies, it continues to affect the health with social and economic adverse impacts. In a developing country like India, oral health care of children remains as one of the most challenging aspects and thus the prevalence of dental caries among children are at rise.² Current data suggested that one out of two children in India is affected by dental caries and there is an increase in caries burden in deciduous dentition. Even after this widespread incidence, dental caries in children is still considered as the most commonly ignored chronic disease among children.³ As per the FDI reports, untreated tooth decay in permanent and primary teeth ranks first and tenth respectively among the 291 commonest diseases and the unmet need for dental care was 3 times greater than for medical care.⁴ In most of the conditions this dental ignorance/neglect occurs due to the lack of knowledge and awareness about the infectious nature of this dental pathology and its associated risk factors to the both dental and general health of children.

In a developing country like India, as the early care providers like the Gynecologists and Pediatricians are likely to interact with the early care givers of a child like the mothers than a Pedodontist, their role in supervising the dental health is inevitable and can be considered as the most effective and influential approach in primary prevention of dental diseases.

A Gynecologist evaluates the overall health of a pregnant mother and her developing child from its intrauterine period with utmost care. A proper perinatal oral health care guidance provided by Gynecologists during the time of pregnancy can help an expectant mother to improve or maintain good oral health status and thereby reduce the complications that can be associated with poor oral health in the mother^{5,6} and can indirectly dictate the future oral health and general health of her child. Gynecologists who are aware about the infectious nature of the oral microbes and the effect of discrete periods or windows of inoculation ⁷ should instruct the mother about the higher risk of developing dental caries in their children by the modification of maternal dental flora using proper perinatal preventive programs. So early intervention and counseling during the perinatal period from can effectively lay down the foundation to ensure good oral health for the mother and thereby for the infant.⁸

A good Perinatal oral health guidance by Gynecologists incorporating the familial and maternal influence of the dental disease and the nature of acquisition of oral bacteria in a child's mouth can reduce the chances of caries susceptibilities in the children.

The early interventions and management of oral conditions can definitely improve a child's oral health, general health along with well-being, and school readiness.⁹ Delayed diagnosis of dental disease can result in exacerbated problems which lead to more extensive and costly care.¹⁰ So the knowledge, attitude and practice of the Gynecologists plays an equally important role as Pedodontists in the prevention of the early oral diseases.

Hence, the present study was conducted to know the knowledge, attitude and Practice of gynecologists in Central Kerala, South India, towards oral health care of children.

Materials and Methods:-

A cross sectional questionnaire survey was conducted among gynecologists of Central Kerala, South India. The sample comprised of 200 gynecologists including private practitioners and doctors from government hospitals. Both sexes were adequately represented and their ages ranged from 30 to 75 years. After obtaining prior permission from the concerned specialty organization authorities, the doctors were asked to answer a questionnaire designed to their particular specialty. All answers were treated with utmost confidentiality. The questionnaire pertained to both

maternal and infant/child oral health care and included questions on prenatal counseling, feeding practices, dietary habits, oral hygiene practices and importance of primary dentition. Data Collected was subjected to Statistical Analysis SPSS Version 22.

Results:-

Among the 200 Gynecologists participated in this study a response rate of 100% was obtained.

Among the participants 68(28 %) of the participants had experience below 10 years and 76(38%) had an experience within a range of 10- 20years and 56(34%) had experience above 20 years. A total of 21 questions were included in the questionnaire.

Knowledge of Gynecologists:

82% of the gynecologists recognized Pediatric dentistry as a separate specialty. A less response was obtained for the knowledge regarding the influence of periodontitis in causing preterm delivery (40%) and regarding the vertical transmission of microbes (38%). Only 46% answered correctly about the influence of birth condition on the dental development. 56 % had knowledge regarding the influence of nutrition, infection medication on dental development. Only 44% of the gynecologist have knowledge regarding the common oral disease. Gynecologists had no knowledge about the first dental visit and its importance.

Attitude of Gynecologists:

A majority of the gynecologists responded positively for the questionnaire related to the maternal oral health as a factor, which influence child oral health 81% and 78% considered pregnancy as a critical period in determining oral health care. 52% of the participants also considered perinatal oral health care as a mean to reduce future chance of ECC.

Practice of Gynecologists:

Even though gynecologists are aware about the pregnancy counseling related to the maintance oral hygiene during pregnancy, only 36% of the participants practically advocated dental health checkups during pregnancy period. Only 42% of the gynecologists recommended cleaning gums pads of infants before the eruption of teeth.

Discussion:-

The AAPD recognizes that infant oral health is the foundation upon which preventive education and dental care must be made to enhance the opportunity for a lifetime free from preventable oral disease. The allied health professionals and community organizations must be involved as partners to achieve this goal.

Dental awareness of qualified medical practitioners may be inadequate with regard to knowledge about dental diseases, oral hygiene practice and speciality treatment rendered by the pediatric dentist. There are very few studies reported in literature on the oral health awareness of medical practitioners particularly, gynecologists. It is unclear to what degree these specialists are knowledgeable about oral health and the extent to which they may already be participating in prevention and assessment. Also, little is known about the incidence of dental problems in their practice.

Hence this study was undertaken to know the knowledge, attitude and practice of gynecologists towards oral health care of children, with the help of a specially designed questionnaire. The advantages of a questionnaire study are that, it allows information to be collected and analyzed easily. It also allows the concerned specialist to express freely their perception on oral health care.

In our study it was observed that most gynecologists are aware of pediatric dentistry as a specialty, but only a small number of gynecologists refer pregnant mothers to a pediatric dentist.

Maternal periodontitis and its influence on the child birth was one of the most studied perinatal oral health related topic in the literature and was documented as early as from mid-1990s by the works of Offenbacher who defined the condition as a sevenfold increased risk factor for a mother to deliver a pre-term, low birth weight baby.⁵ In this study the knowledge of the Gynecologists about the influence of maternal periodontitis as a factor which can contribute for birth difficulties was not known by majority of the participants and only 40% of the Gynecologists

considered the maternal periodontal diseases as an influencing factor that can cause preterm delivery of child and this result was in accordance with the studies of Subramaniam P.¹¹

Disturbances of dentofacial structures that seen after the birth can be the reflection of the maternal general and oral health complications during the prenatal or postnatal period. The factors like preterm birth, low birth weight and the mode of delivery were the birth factors which can adversely influence the future dental development of the child.¹²

Perinatal health factors including maternal general health, nutritional deficiency, consumption of antibiotics, trauma, maternal infections during the course of pregnancy can cause a direct damage to the ameloblast which can lead to enamel defects in children and can add risk to the future dental health of the child.¹² In the current study only 56% of the Gynecologists knew about the influence of all these factors on the child dentition and was accordance with the previous study.¹³

As the jaw of a child at the time of birth contain all the tooth germs of the primary teeth and permanent first molars and incisors in its developing stages, any disturbances during this perinatal period can leave their mark in those dental tissues depending on the stage of formation of the hard tissue. Enamel defects especially enamel hypoplasia and hypo-mineralization which was characterized with a defect in the matrix formation and mineralization phase respectively can disturbs the dental morphology and may predispose the conditions for plaque accumulation and caries progression and in severe cases may even cause space loss and malocclusion.¹² But 50.9% of the Gynecologists who participated in the study believed that tooth germs will be absent in a neonates jaw which also suggests their lack of knowledge about the dental development and its significance at the time of birth.

From this study it appears that gynecologists do not understand how the oral health of the mother affects the oral health of the child. Although this relationship is specifically observed with regard to maternal and infant caries levels, very few gynecologists were aware of it. Almost 50% of the gynecologists were of the opinion that the mother's oral health affects only the position of the child's teeth.

Gynecologist are unaware about knowledge regarding the mode of transmission of oral bacteria, so that they cannot effectively anticipate the pregnant mother about the condition and to reduce the risk of developing ECC in their children. In the present study the concept of the transmission of oral bacteria were understood by only 27% of the participants and 38% of the participants even suggested that such acquisitions won't occur.

On evaluating the attitude of gynecologist about the importance of perinatal oral health, 78% of the Gynecologists responded that they consider pregnancy as a critical period for determining the child's future dental health and 81% of the Gynecologists responded that they considered poor oral hygiene of mother as a determining factor for the future general and oral health issues of the child. 52% of the Gynecologists who participated in the current study also considered that a proper perinatal oral health care guidance can effectively reduce the chances of development of the most prevalent dental disease, ECC in the Pediatric group. Similar response was also reported in previous studies.^{11,13}

Dental caries during infancy being a preventable condition, encouragement for a professional caries risk assessment as early as from the 6th month of age, promotion of proper infant oral hygiene measure and education of the mother about the chances of horizontal and vertical mode of transmission of oral bacteria's can effectively reduce the future risk of developing ECC. ¹⁴ But in the present study only 46% of gynecologists understood the influence of the familial high caries rates, poor oral hygiene and bottle feeding as the predisposing factors for developing ECC.

The main aim of perinatal oral health care, with regard to dental caries transmission, was to decrease the load of cariogenic bacteria in an expectant mother's mouth so that the MS colonization of the infant can be delayed as long as possible. A good perinatal oral health guidance provided by the Gynecologists can effectively fulfill the situation.

In the present study the response of the Gynecologists in incorporating oral health related topics during the pre-pregnancy counseling was found to be satisfactory and 68% of the Gynecologists reported that they included oral health related topics during pre-pregnancy counseling. But the actual implementation of this approach by advocating a routine professional dental checkup during pregnancy period was found to be followed only by 36% of the Gynecologists .

According to AAPD recommendations oral hygiene measures should be implemented no later than the time of eruption of the first primary teeth but the cleaning of the gum pads can be started as early as within the first week of birth using wet gauze or cloth.¹⁵ In the present study it was noted that only 42% of the Gynecologists advocated proper infant oral hygiene measure and which pointed to their less involvement in the infant oral health care.

So on evaluating the overall response of the Gynecologists, a good attitude towards the Pediatric oral health care was present among the participants but their knowledge and practical approaches were found to be limited.

There are certain limitations to this study. As, with any questionnaire survey, there is the potential for responder bias. Although the response rate was 100%, the respondents had different opinions regarding oral health in their practice. Moreover this survey was kept as short as possible, limiting the use of open-ended questions that could have enabled us to obtain further details regarding their awareness of child oral health. Further studies with more questions structured to elicit in depth information need to be undertaken.

Table 1:- Response of Gynecologists for the category-Knowledge.

No	Questions	Choices	Response
1	Do you know that there is a separate specialty in dentistry exclusively for child oral health care?	Yes	82%
		No	18%
2	According to you, which among the following child birth conditions can influence dental development?	Pre term	16%
		Low birth weight	22%
		Mode of delivery	18%
		All	46%
3	According to researches which oral condition of an expectant mother shows higher prevalence for preterm delivery?	Dental caries	44%
		Periodontitis	40%
		Crooked teeth	9%
		Don't know	7%
4	Which among the following conditions, you think can influence a child's dental development?	Nutritional deficiency	14%
		Infection	
		Medication/alcohol	18%
		All	12%
5	How many teeth you think will be present in a developing baby's jaw at the time of birth?	Don't know	56%
		No teeth	50%
		All milk teeth	31%
		All	19%
6	Which is the most common oral disease that can develop in a child whose mother has poor oral health and decayed teeth?	Don't know	-
		Crooked teeth	22%
		ECC	44%
		Missing teeth	14%
7	Which part of the oral cavity you think lodges the maximum load of oral microorganisms?	Don't know	20%
		Saliva	26%
		Cheek mucosa	42%
		Tongue	14%
8	How the oral bacteria transmit from	Don't know	8%
		Kissing	23%

	mother (vertical transmission) to a child?	Sharing foods	12%
		Both	27%
		Cant transmit	38%
9	What is the recommended time for first dental visit?	6 th month	24%
		3 year	56%
		5 year	2%
		Don't know	18%
No:	Questions	Choices	Respo
			nse
10	Do you think whether the poor oral hygiene status and high caries (cavity) level of an expectant mother can adversely affect her child's future oral health?	Yes	81%
		No	19%
11	According to you from which route, oral bacteria can enter in a new born baby's mouth?	Mother/ care giver	40%
		Present at birth	12%
		Birth canal	20%
		All	28%
		Don't know	12%
12	What are the condition/s you think will make an infant/ child more prone for the development caries (cavities) in his/her later life?	High caries in mother/ siblings	6%
		Poor oral hygiene	23%
		Bottle feeding	25%
		All	46%
		Don't know	23%
13	Do you think pregnancy as a critical period which can decide on a child's future oral health?	Yes	78%
		No	22%
14	Do you think proper perinatal oral health care of an expectant mother can reduce the future chance of ECC?	Yes	52%
		No	48%
15	Do you think infected primary teeth (milk teeth) can influence the health of future permanent teeth?	Ye	78%
		s	22%
		N	
		o	
16	How often a publication related to child /maternal oral health does come in your concerned journals?	Often	28%
		Very	54%
		few	18%
		didn't noticed	

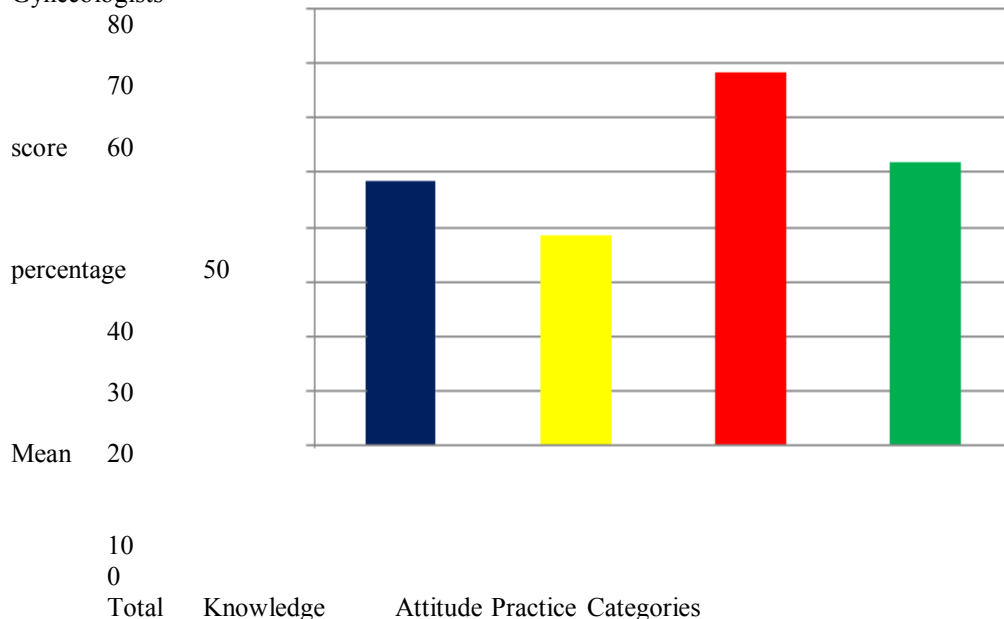
17	Do you think that awareness about child oral health is a topic that should be addressed more?	Yes	98%
		No	2%

Table 2:- Response of Gynecologists for the category-Attitude.

No	Questions	Choices	Response
18	Do you include oral health related topics in the pre-pregnancy counseling period?	Yes	68%
		No	32%
19	How often you recommend a dental checkup during pregnancy period?	Rarely	8%
		Not recommend	12%
		Often recommend	36%
		Often recommend	44%
20	Which method will you suggest a new mother for cleaning her infant's oral cavity?	Clean wet soft gauze or cloth	42%
		Brush	10%
		Recommends only after the eruption of teeth	38%
21	Which media will you prefer for obtaining information regarding child's oral health?	Television	8%
		Social medias	20%
		Journal/magazine	36%
		CME	36%

Graph no:1:- Mean percentage score of Gynecologists

Graph 1: Mean percentage score of responses of Gynecologists



Conclusion:-

The Gynecologists who participated in the study showed a good attitude towards the aspects of child dental health. But an inadequate level of knowledge and practice scores were obtained for the participants. The response thus suggests an insufficient involvement of Gynecologists in the pediatric oral health care which might be the reflection of their inadequate knowledge regarding the topic.

Recommendation:-

From the study it was seen that the dental topics were less known and practiced by the Gynecologists. This condition might be due to the time pressures, inadequate staffing or less interdisciplinary interactions between the dental and medical professionals that these non-dental disciplines devote less attention on oral health topics.

For the improvement of the condition, a multidisciplinary approach by the Pedodontists is advocated to create a caries free future smiles.

Reference:-

1. American Academy of Pediatric Dentistry. Guidelines on Perinatal and Infant Oral Health Care. Pediatric Dentistry 2018; Vol. 40, issue 6: 216–20.
2. Mehta A. Trends in dental caries in Indian children for the past 25 years. Indian J Dent Res. 2018 May-Jun; 29(3):323-328.
3. Kuriakose S, Prasanna M, Remya KC, Kurian J, Sreejith KR. Prevalence of early childhood caries among preschool children in Trivandrum and its association with various risk factors. Contemp Clin Dent. 2015 Jan-Mar; 6(1):69-73.
4. The Challenge of Oral Disease – A call for global action. The Oral Health Atlas. 2nd ed. Geneva: FDI World Dental Federation; 2015.
5. Offenbacher S, Jared HL, O'Reilly PG, Wells SR, Salvi GE, Lawrence HP, Socransky SS, Beck JD. Potential pathogenic mechanisms of periodontitis-associated pregnancy complications. Ann Periodontol. 1998 Jul; 3(1):233-50.
6. Dasanayake AP, Gennaro S, Hendricks-Muñoz KD, Chhun N. Maternal periodontal disease, pregnancy, and neonatal outcomes. MCN Am J Matern Child Nurs. 2008 Jan-Feb; 33(1):45-9.
7. Caufield PW, Cutter GR, Dasanayake AP. Initial acquisition of mutans streptococci by infants: evidence for a discrete window of infectivity. J Dent Res. 1993 Jan; 72(1):37-45.
8. Köhler B, Andréen I, Jonsson B. The effect of caries-preventive measures in mothers on dental caries and the oral presence of the bacteria Streptococcus mutans and lactobacilli in their children. Arch Oral Biol. 1984; 29(11):879-83.
9. Lucey SM. Oral health promotion initiated during pregnancy successful in reducing early childhood caries. Evid Based Dent. 2009; 10(4):100-1.
10. Loesche WJ. Role of Streptococcus mutans in human dental decay. Microbiol Rev. 1986 Dec; 50(4):353-80.
11. Subramaniam P, Girish Babu K, Babu PS, Naidu P. Oral health care of children: gynecologists and pediatricians' perspective. J Clin Pediatr Dent. 2008 Spring; 32(3):253-8.
12. Seow WK, Humphrys C, Tudehope DI. Increased prevalence of developmental dental defects in low birth-weight, prematurely born children: a controlled study. Pediatr Dent. 1987 Sep; 9(3):221-5.
13. Baseer MA, Rahman G, Asa'ad F, Alamoudi F, Albluwi F. Knowledge, attitude and practices of gynecologists regarding the prevention of oral diseases in Riyadh city, Saudi Arabia. Oral Health Dent Manag. 2014 Mar; 13(1):97-102.
14. Berkowitz RJ. Acquisition and transmission of mutans streptococci. J Calif Dent Assoc. 2003 Feb; 31(2):135-8.
15. American Academy of Pediatric Dentistry. Guidelines on caries risk assessment and management for infants, children and adolescents. Pediatric dentistry. 2016; Vol. 37, issue 6: 132–13.