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Original Research Article

Perspective of pediatricians about early childhood caries (ECC) in lumbini province Nepal: A major virulent dental problem

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ABSTRACT

Introduction: Early childhood caries (ECC) is a significant worldwide oral health problem that needs to be looked after by parents. Some parents do not care about the oral health of their children, and they more frequently visit pediatricians. So, pediatricians are one of the most reliable profession for preventing children's oral diseases, and promoting awareness.

Objective: The aim of the study was to know the knowledge and awareness of pediatricians' about early childhood caries (ECC) in lumbini province, Nepal.

Materials and Methods: A total of 40 pediatricians were selected by using census sampling method and were requested to fill out an objective questionnaire pertaining to individual's knowledge about ECC, without providing any oral health information taking duration of the study from March 2021 to September 2021.

Results: About 23(56.5%) of pediatricians understood the importance of pediatric dentistry. About 34(86.2%) of pediatricians performed oral examination regularly. Around 17% of pediatricians had knowledge of the ECC. Only 14(33.3%) of pediatricians acknowledged the cariogenicity of sugar containing medical syrups.

Conclusions: The study shows poor knowledge regarding ECC, oral health, and dental treatment need in children among the surveyed pediatricians although having good knowledge about pediatric speciality and importance of primary dentition. Thus, there is a need to update the Pediatricians on recent recommendations about ECC and its early screening.

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1. Introduction

Early childhood caries (ECC) formally termed as nursing bottle caries and baby bottle decay is a particularly virulent form of dental caries affecting the deciduous teeth till 71 months of age.¹ Prolonged bottle-feeding with sugarcontaining fluids, especially before sleep, and delayed weaning are frequently cited ECC risk factors² and is about ten times higher than that of periodontal or other oral health problems.³ Due to pain children requires dental treatment⁴ thus, ECC is a complex dental disease that needs to be looked after by parents. As observed, parents do not go for regular dental check-up as often as they visit pediatricians,^{5,6} denoting these visits as "wellbaby" or "check-up" examinations.⁷ Dental problems can be assessed by pediatrician thus educating parents the preventive measures,⁸ thus role of pediatricians in oral

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health was formalized in a policy issued by the American Academy of Pediatrics (AAP) in 2003 and reinforced again in 2008.⁹ Dental studies on 5–6 year old Nepali children shows ECC prevalence from 52% to 79%, with high rates of mouth pain.¹⁰ Due to inadequate literature about pediatricians referrals (dental screening, dental caries prevention) and lack of exact statistics on dental awareness in Nepal led us to conduct this study.

Thus, the aim of this study is to assess pediatrician's perspective toward ECC, oral health, and treatment needs of their child patients.

2. Materials and Methods

An ethical approval was obtained priorly for the conduction of this cross-sectional study, from the ethical committee of institutional review board (IRB) UCMSTH, Bhairahawa, Nepal. Duration of the study was from March 2021 to September 2021. Pediatricians practicing in UCMSTH and peripheral regions of Bhairahawa were selected for the study. A total of 40 pediatricians were included using census sampling method in the study. All the selected pediatricians had either a postgraduate diploma (DCH) or a master's degree (MD) or both in pediatrics. They were requested to fill out an objective questionnaire without providing any oral health information and training.

For the data collection adapted by literature review 10 a self-administered, close ended questionnaire was used

The questionnaire composed of the following sections:

- 1. Sociodemographic characteristics of pediatrician.
- 2. Knowledge regarding to pediatric dentistry like tooth eruption, types of dentitions, primary dentition importance and referral.
- 3. Dental caries and oral health practice guidelines and opinions.
- 4. Assessment of Attitude of the participants towards oral health including ECC.
- 5. Participants desire of receiving dental training and education beside the preferred dental topics and training methods.

After consent, participants were asked to fill out the questionnaire. Confidentiality and privacy of the participants were governed and protected. The English based questionnaire was distributed to the hospitals and clinics. Scores were given to each question in the knowledge, practice, and attitude section. To all close ended questions, the maximum score to was given to correct answer and minimum was given to incorrect answer.

2.1. Scoring criteria

The scores are assessed on the percentage basis which are as follows:¹¹

1. <50%: poor

- 2. 50–75%: moderate
- 3. 75%: good.

2.2. Declaration of consent

The authors certify that they have obtained all appropriate consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

3. Results

40 Pediatricians participated in this study, out of them majority were male (80%) having 10-15 years of experience with per day OPD of 30–50 patients. (Table 1)

Table 2 shows the knowledge regarding pediatric dentistry. About 23(56.5%) pediatricians had knowledge aboutpedodontics, 36(92.85%) pediatricians knew about the role of deciduous dentition, 34(86.2%) examined oral cavity, referral of children to pediatric dentist was seen among 70.8% of participants for routine checkup and proper treatment and agreed that first dental visit should be done by 1 year of age.

Only 7(17%) attributes had idea about ECC, 36(87.2%) out of them restricted sugary diet, 12(29.15%) participants knew that cariogenic bacteria is transmissible to offsprings, and only 14(33.3%) of them agreed sugary drugs can be cariogenic. In this study all participants were against bottle feeding, 32(80%) out of them correlated the importance of oral health and breast feeding, 21(52.3%) of them desired that mothers should be educated about infant oral health care, still only 4(8.2%) advised to start tooth brushing between 6 and 12 months of age, and 22(52.7%) of them wanted diet counselling for every child. (Table 3)

Table 4 shows the attitude assessment of the participants towards dental health including ECC. About 95% of pediatricians acknowledge their role in encouraging dental health awareness and realised that dental examination should be a part of routine health check up.

Table 5 shows that 34(85%) pediatricians desired to receive oral health training. ECC (85%) and first aid to tooth injury (80%) are the most important oral health topics respectively. About 35(87.5%) pediatricians received more training and education by attending workshops, seminars and CME courses on oral health topics.

4. Discussion

As a result of the increasing number of Nepalese's children with dental caries along with the fact that children are not seen enough by the dentist in their first years compared with pediatricians. The reason behind the present study is lack of literature regarding the attitude of paediatricians

Table	1:	Socio	demograi	ohic	charact	eristics	of 1	pediatrician	
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Characteristics	Number of Pediatricians			
	and (%)			
Gender				
• Male	32(80%)			
• Female	8(20%)			
Nationality	Nepalese			
Dental training				
• Yes	7(17.5%)			
• No	33(82.5)			
Experience of practice in				
years				
• <5	6(15%)			
• 5-10	7(17.5%)			
• 10-15	17(42.5%)			
>15	10(25%)			
Numbers of patients in OPD				
in a day				
• <10	2(6.13%)			
• 10-20	17(43.09%)			
• 20-30	19(46.16%)			
• 30-50	-			
• >50	2(4.61%)			
Types of practice				
Individual practice	17(43.08%)			
Group practice	6(15.38%)			
Academic	7(18.46%)			
Hospital	10(23.08%)			

Table 2: Knowledge regarding to pediatric dentistry like tooth

 eruption, types of dentition, referral and significance of deciduous

 dentition

Questions	Number of		
	pediatricians and $\%$		
Awareness about pediatric dentistry			
• Yes	23(56.5%)		
• No	17 (43.5%)		
Importance of primary dentition			
• Yes	36(92.85%)		
• No	4(8.15%)		
Examining of oral cavity			
• Yes	34(86.2%)		
• No	6(13.8%)		
Referred to pedodontist for pain			
• Referred	28(70.8%)		
 Pharmacologically treated 	7(17.4%)		
• Both	5(11.8%)		
First dental visit			
• 6 months	6(17%)		
• 1 year	28 (70.8%)		
• Dental caries/ pain present	4(10.7%)/2(4.5%)		

Questions	Number of pediatricians		
Aware about early childhood	anu 70		
caries?			
• Yes	7(17%)		
• No	33(83%)		
Is sugary food restricted?			
• Yes	36(87.2%)		
• No	4(12.8%)		
Is cariogenic bacteria			
transmissible to offsprings			
• Yes	12(29.15%)		
• No	28(71.85%)		
Cariogenicity of medicated			
syrups			
• Yes	14(33.3%)		
• No	26(66.7%)		
Advising bottle feeding			
• Yes	8(20%)		
• No	32(80%)		
Oral health education to mother			
Yes	21(52.3%)		
No	19(47.7%)		
Age at which brushing			
recommended			
• 6-12 months	4(8.2%)		
• 12-18 months	22(56.4%)		
• 18-24 months	8(19.4%)		
>2 years	6(16%)		
Diet counseling			
• No	0		
 Yes every patient 	22(52.7%)		
• Yes some time	11(28%)		

 Table 4: Attitude assessment of the participants towards ECC

Questions				Number of pediatricians
Can paediatricians	Spread	Oral	Health	and <i>//</i>
awareness				38(95%)
• Yes				2(5%)
• No				
Should routine examination	health check	up inclue	de denta	
• Yes				38(95%)
• No				2(5%)

 Table 5: Participants desire of receiving dental training and education.

Questions	Number of pediatricians and %
Desire for more education and	
training	
• Yes	34(85%)
• No	6(15%)
• I do not need	0
Dental topics	
 General knowledge of pediatric 	24(60%)
dentistry	
• ECC	34(85%)
• Dental caries or its prevention	17(42.5%)
• Fluoride supplements	8(20%)
 First aid for tooth injury 	32(80%)
Method of training and education	
Distance learning	18(45%)
• Workshop, seminar and CME	35(87.5)

towards infant oral health care. Hence, this study has been conducted among pediatricians in Bhairahawa and peripheral regions.¹²

The present study found that pediatricians had moderate knowledge about some aspects of ECC and infant oral health, but had poor knowledge in recognising early signs of tooth decay. The majority of participants reported that they play an important role and are involved in promoting the oral health of children in their practices; however, very few pediatricians reported recommending a first visit to the dentist before one year of age showing poor knowledge. The result of our study showed moderate knowledge of pediatricians about the existence of pediatric dentistry as compared to previous studies by Shetty RM13 86%, Subramaniam et al.¹⁴ 91.3%, and Nammalwar and Rangeeth⁸ 80.3% showed good knowledge of participants about pedodontics. As this study showed most of the participants are already practicing oral examination in patient's regular health check up; this result is similar to the studies conducted by Balaban et al.¹⁵ and Lewis et al.¹⁶ More than 92.85% of pediatricians were well aware about the role of deciduous teeth.

Referrals was done by 70.8% of the participants. The focus of this study is to encourage the relationship between pedodontist and paediatrician in order to create a channel for prevention of ECC on a large scale so that lacunae can be fiiled. Only 17% of the participants had similar opinion to AAPD guidelines and AAP which says first dental visit should be within 6 months of age or by the first birthday. Approximately 70.8% of pediatricians were having poor knowledge and awareness about semiannual dental check up that as per AAPD guidelines¹⁷ and 17% were unaware about ECC. Prevention and management of ECC can be can be achieved only by implementing awareness about it. Health professionals, especially pediatricians, are found to be a valuable source to spread knowledge and awareness

about ECC among parents.¹⁸

Mutans Streptococci being one of the main causative agent of tooth decay, ¹⁹ only 29.15% of pediatricians had knowledge about vertical transmission of this cariogenic bacteria as described by Murthy and Mohandas and Sezer et al.²⁰ 33.3% of participants agreed on carcinogenicity of medicated syrups whereas study by Nammalwar and Rangeeth showed that only 27% of pediatricians acknowledged the importance of the cariogenicity of medicated syrups.⁸

The results of the present study revealed that 95% of attributes acknowledged their role in prevention of ECC but still they lack in knowledge about it. In order to overcome this problem, pediatric dental education should be included in pediatric medical curriculum which can be achieved by pediatric dental educational and training workshops/CME for pediaticians.

Collaboration of medical and dental communities can be promoted by enhancing referral system. Herndon et al. demonstrated that oral health training indirectly influences physicians' pediatric oral health practices by increasing their confidence in activities such as advising parents and performing oral health screening and risk assessment. Efforts to engage physicians in oral health training will promote physicians' confidence and increase the likelihood of their performing preventive oral healthcare practices.²¹

5. Conclusion

The findings of the present study suggest that good number of participants knew about pediatric dentistry as a speciality but still does not showed thorough knowledge about infant oral health including ECC. The majority of Pediatricians agree showing good knowledge that they play vital role in improving child's oral health even though, they lack in proper dental knowledge and training. Thus, there is a need to motivate paediatricians about oral health assessment in their clinics for early dental caries prevention which can be achieved by increased mutual interaction and discussion about oral health with pedodontist.

6. Conflict of Interest

None.

7. Source of Funding

None.

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