

What primary healthcare providers need to know about oral examination in children? A qualitative study

Peimaneh Hosseini-Dastnaei DDS¹, Arash Najimi PhD²,
Zahra Saied-Moallemi PhD³

Original Article

Abstract

BACKGROUND AND AIM: Providing oral examination for children is one of the primary healthcare providers (PHCPs) assigned tasks. Since children's oral and dental health needs can be recognized only through a proper oral examination, this study was conducted to illustrate what PHCPs need to know about pediatric oral screening.

METHODS: This qualitative content analysis study was conducted in Najafabad, Isfahan, Iran, in 2017. Data were gathered through in-depth semi-structured interviews with 21 PHCPs. The sampling began with a purposeful method and continued through the snowball method. Qualitative data were coded and analyzed using MAXQDA software.

RESULTS: The information that PHCPs need to know about children's oral and dental examination was categorized in three major themes and nine subthemes: positioning and controlling the child (positioning for each age group and controlling uncooperative children), performing the oral examination (evaluating child's oral hygiene, identifying teeth series and classes, detecting dental caries, evaluating teeth eruption, and recognizing facial traumas), and working with Integrated Health System (IHS) (answering the IHS' oral health question, using the provided information in IHS, and recording the findings).

CONCLUSION: PHCPs who participated in this study could not perform an acceptable oral screening for children and they wanted to know more about how they could carry out a correct one. By providing proper education to meet all the information needs of PHCPs and discarding irrelevant topics, the health system may facilitate the delivery of standard oral and dental health services for children.

KEYWORDS: Primary Health Care; Oral Health; Oral Examination; Dental Decay; Children; Qualitative Research

Citation: Hosseini-Dastnaei P, Najimi A, Saied-Moallemi Z. **What primary healthcare providers need to know about oral examination in children? A qualitative study.** *J Oral Health Oral Epidemiol* 2019; 8(4): 204-11.

The role of primary healthcare providers (PHCPs) in delivering general health services, as well as oral health services, is well established.¹ PHCPs play a key role in promoting the health of people, especially children, due to their early and continuous interaction with children and parents and assessment of their needs.^{2,3} Oral screening is the first and most crucial step in evaluating

children's oral health and providing proper care services.⁴ Since oral screening is one of the responsibilities of PHCPs, they can decide about the children's oral health needs by performing accurate oral examinations and asking detailed questions from the parents about their children's oral hygiene compliance, nutrition, and nutritional or non-nutritional habits.⁵ Therefore, PHCPs must have the ability to perform thorough oral

1- PhD Student, Dental Research Center AND Department of Oral Public Health, School of Dentistry, Isfahan University of Medical Sciences, Isfahan, Iran

2- Assistant Professor, Department of Medical Education, Medical Education Development Center, Isfahan University of Medical Sciences, Isfahan, Iran

3- Assistant Professor, Dental Research Center AND Department of Oral Public Health, School of Dentistry, Isfahan University of Medical Sciences, Isfahan, Iran

Correspondence to: Zahra Saied-Moallemi PhD
Email: smoallemi@mui.ac.ir

examinations and establish effective communication with the parents to gather the necessary information.⁶

In this regard, Kirk et al. attributed the poor quality of oral health screening by primary providers to the lack of basic knowledge, such as identification of the series and classes of teeth.⁷ Other researchers blame PHCPs' weaknesses in detecting dental caries.^{4,6} Golinveaux et al. emphasized that pediatric nurses and other personnel, who are responsible for oral health screening of children, should receive enough information to enable them to fulfill their responsibilities.⁸ On the other hand, some shortcomings in oral health education programs seem to contribute to the low quality of oral health screening by PHCPs.⁹

Since healthcare systems implement training programs for PHCPs and nurses to define their oral health responsibilities, the educational content of these programs must be in line with their job requirements.¹⁰ Numerous studies have shown that the educational needs of PHCPs are not met in educational courses, and instead of them, many unrelated topics are discussed in oral health programs.^{11,12} Consequently, providing relevant information in this area may affect the quality and quantity of oral health screening by examiners.¹³

According to multiple studies, one of the important reasons behind the discrepancy between the oral health educational content and practice is the educational planners' inattention to the actual needs of PHCPs concerning their responsibilities.^{14,15} To this end, the first step is to identify subjects and topics that PHCPs need to know in order to perform their tasks.⁴ Since there is inadequate information about the required knowledge of Iranian PHCPs for performing oral health examinations for children, and there is a scarcity of dental health records in the Integrated Health System (IHS) database of Iran, in this qualitative study, we aimed to fill the existing gaps. Our findings can guide oral health educators and program planners to

focus on important issues and encourage PHCPs to increase their knowledge and skills to provide oral health screening services for children.

Methods

This qualitative study was carried out in 2017 in the public health centers of Najafabad County, Isfahan, Iran. Najafabad is one of the four regions included in the pilot study of the "New Well-Child Care Package" in the country. By using a content analysis method, the authors aimed to explore and determine the required knowledge of PHCPs about children's oral and dental health screening. For recruiting the participants, purposeful sampling, followed by snowball sampling, was applied. For maximum diversity, PHCPs' differences in age, educational level, educational field, work experience, and occupational status were considered in the selection of the participants. The inclusion criteria were as follows: working as a PHCP, being a "Well-Child Care Package" provider, and willingness to participate in the survey.

On the other hand, the unwillingness to stay in the study was considered as the exclusion criterion. Data were collected through in-depth, semi-structured interviews. At the beginning of the interviews, to start the conversation, some general open questions were asked about the PHCPs' experience of providing oral health screening for children. The next questions were asked according to the participants' responses. The date and time of the interviews were arranged with participants, and all interviews were conducted in the participants' workplace. The interviews were conducted in one or two sessions (30-45 minutes each) in a relaxed environment concerning the time constraints and tolerance of PHCPs.

The interviews were conducted, recorded, transcribed, reviewed, coded, and immediately analyzed by the researchers. The content analysis method was used for data analysis. In the content analysis process, each interview was read several times carefully to

reach a primary and universal understanding. Afterward, by highlighting the important statements, initial codes or meaning units were identified in the transcribed interviews. Next, by abstracting and labeling similar meaning units, transparency of the meaning units was determined and themes and subthemes were formed.

Data analysis was continuously and concurrently performed with data collection. After conducting ten interviews, the data saturation was occurred. Nevertheless, the data collection process was extended after that. Although the last 11 interviews were not included in the formation of new categories, they were conducted to consider the variety of participants' demographic characteristics, ensure data saturation, and increase the generalizability of our findings. Finally, the main themes were extracted. MAXQDA 12 (VERBI GmbH, Berlin, Germany) was used for data analysis.

The validity and reliability of the study were examined based on Lincoln and Guba's criteria. Cooperation and interaction between the interviewer and the participants were ensured for the credibility of the study. External supervisors controlled reviews and experts' comments were integrated, as well. Also, to ensure the dependability of the collected data, consulting experts were asked to review the materials. For confirmability and auditing of the study, regardless of all presumptions and biases, the interviewer recorded and reported the steps and processes of the study thoroughly to facilitate follow-up by other researchers. Furthermore, the participants approved the validity of the results. The selection of multiple samples in this study contributed to the maximum diversity of the participants and increased the generalizability of our findings.

The Ethics Committee of Isfahan University of Medical Sciences approved this study (No. 173059). The study's objectives, information confidentiality, and the right to withdraw from the study at any time were explained for participants. Oral consent was also obtained

from the participants for recording their voice.

Results

Twenty-one interviews were conducted with 19 women and two men. The participants' mean age was 34.2 ± 7.2 years (range: 24-52 years), and their mean work experience was 8.5 ± 0.8 years (range: 6 months to 29 years). Table 1 summarizes the PHCPs' demographic characteristics. Although the PHCPs had different educational levels and fields, the majority of them had university degrees. Table 2 presents the participants' educational level and field. A total of 870 first-level codes were extracted from the interviews. By merging the overlapped codes, the final ones were turned to 430 codes.

Table 1. Demographic factors of participants (n = 21)

Characteristic	Number of participants
Sex	
Male	2
Female	19
Age (year)	
20-30	6
31-40	6
41-50	7
51-60	2
Work experience (year)	
Under 5	6
5-10	5
10-20	5
20-30	5
Job performance assessment status	
Poor	5
Moderate	8
Good	8

The PHCPs' necessary information about pediatric oral and dental health examination was categorized into three major themes, namely, "positioning and controlling the examinee", "performing oral examination", and "working with the IHS". Figure 1 presents all of the extracted themes and subthemes. According to the participants, some knowledge gaps impaired their ability to perform oral examinations and affected the quality of provided services.

Table 2. Participants' level and field of education (n = 21)

Characteristic	Number of participants
Education level	
Diploma	2
Associate	12
BSc	6
MSc	1
Field	
Public health	4
Family health	12
Midwifery	2
Diseases control	1

BSc: Bachelor of Science; MSc: Master of Science

Positioning and controlling the examinee:

The PHCPs stated that they had problems with positioning and controlling children for oral health examinations. They did not have the necessary knowledge for positioning children from different age groups or controlling younger and non-cooperative children. Some of the participants stated:

"I do not know what the right position is to perform a good oral and dental examination for children from different age groups." (p. 13)

"I could not examine very young children. I had several problems with the babies' position and crying." (p. 7)

Performing oral examination: The second theme was related to the PHCPs' needs and requirements to perform accurate oral and dental examinations. It consisted of five subthemes: "evaluation of oral hygiene in

children", "identification of teeth", "detection of dental caries", "evaluation of tooth eruption", and "recognizing the signs and symptoms of facial traumas".

The participants did not have accurate information on how to evaluate the quality of children's oral hygiene done by the parents. One of the participants asserted:

"Sometimes, I do not know how to figure out if the mother brushes her child's teeth or how she does it." (p. 4)

Also, PHCPs expressed that they had difficulties detecting and distinguishing between dental plaque, dental calculus, and dental stain. In this regard, one of the participants asserted:

"When I see a discolored tooth, I do not know if it is because of improper tooth brushing, iron drop, or tooth decay." (p. 11)

Nearly less than half of PHCPs could not distinguish between healthy and inflamed gums. One of the participants stated:

"In oral screening, I cannot find out if children have healthy gums or inadequate oral hygiene." (p. 7)

Almost all PHCPs wanted to have more knowledge about the differences between primary and permanent teeth. Most of them were unable to distinguish between posterior primary and permanent teeth, especially the first permanent molars. One of the participants expanded on this weakness:

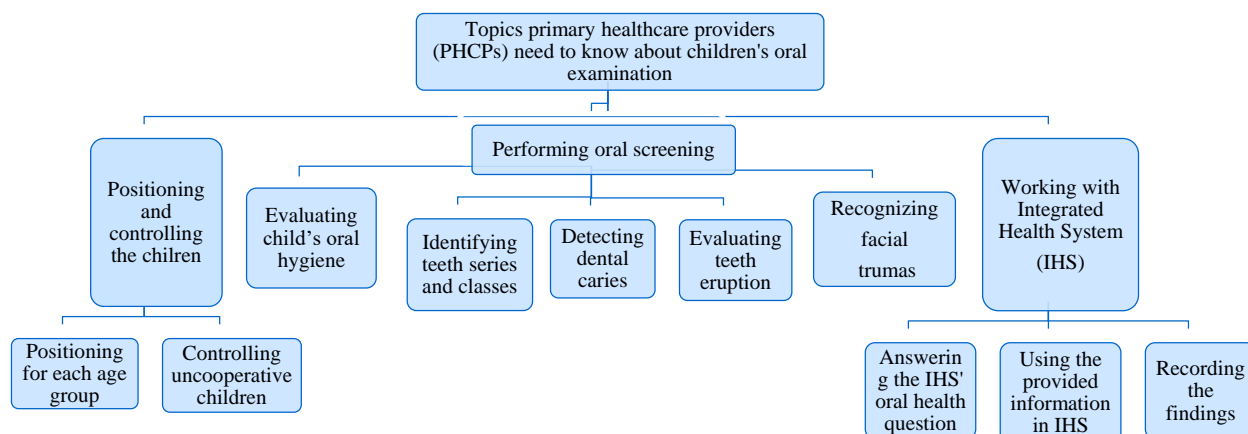


Figure 1. Extracted themes and subthemes that cover what topics which primary healthcare providers (PHCPs) PHCPs need to know about children's oral examination

"I know that the first permanent molar teeth are critical, but I do not know which teeth are primary or permanent." (p. 6)

Another weakness of PHCPs was their inability to identify permanent and primary teeth. In this case, one of the participants, with more than ten years of work experience stated:

"I can determine the number of teeth by counting them from the midline to the posterior portion of the oral cavity, but in children with tooth extraction, I cannot identify the teeth based on their shape." (p. 3)

Detection of dental caries was another problem of PHCPs. One of the interviewees made the following remark about the first signs of dental caries:

"I think the first sign of tooth decay is when we can see the dark black spots." (p. 1)

Another weakness of PHCPs in the pediatric oral examination was the evaluation of caries progression. One of the participants stated:

"I only take a look at the teeth, but I cannot determine if the dental caries is progressive or latent, deep or shallow, or even if tooth discoloration is related to calculus or tooth decay." (p. 17)

The final subtheme was "recognizing the signs and symptoms of facial traumas". The findings showed that PHCPs did not have adequate information in this area. One of the participants said:

"Among the signs and symptoms of facial and dental traumas, I can only detect fractured and avulsed teeth." (p. 2)

Another participant remarked:

"I do not know what the signs and symptoms of injuries are. Are these only referring to bleeding gums and broken teeth?" (p. 9)

Some PHCPs did not have adequate information about the signs and symptoms of tooth eruption. An interviewee stated:

"I do not know how much gum swelling and redness is related to tooth eruption or how much of it is due to decay or trauma." (p. 19)

Moreover, PHCPs were unable to recognize delayed tooth eruption. One of the

participants told:

"I cannot memorize the eruption time of all teeth. I have problems in this area." (p. 3)

Working with the IHS: This theme was the final one addressed by PHCPs. Most of the participants did not understand the reasons behind the questions in the oral and dental health part of the IHS. One of the interviewees remarked:

"I do not know why we should ask about the family history of dental caries in children without tooth eruption." (p. 8)

In addition, some of the participants did not know how they could use information, such as a normal tooth eruption timetable, provided by the IHS. In this regard, an interviewee notified:

"This table contains some numbers indicating the range of normal eruption time for each tooth, but I do not know when delayed eruption occurs. After the first number? Between the first one and the second one? Or after the second number only?"

Many participants did not know how to register the clients' data in the IHS database. One of the participants stated:

"I do not know how to work with or complete the oral health section of the IHS. For example, I do not know where I can record the decayed primary teeth." (p. 3).

Discussion

As the oral examination is the first step to determine every child's need for oral health services, the quality of this process is of paramount importance.⁴ Generally, PHCPs have constant interaction with children and their parents. Therefore, they can give them proper advice and suggest suitable preventive approaches, based on an accurate oral screening plan for children.¹³ In this qualitative study, we categorized PHCPs' oral screening shortcomings and weaknesses into three major themes: "positioning and controlling children", "performing the oral examination", and "working with the IHS".

For an acceptable pediatric oral screening, PHCPs need further information about the

mentioned subjects and themes. Similar to our findings, Pierce et al. found that it was vital to improve the PHCPs' knowledge of accurate oral screening. They identified essential themes, including "identification of tooth series", "caries detection", and "caries risk assessment".¹⁶

Although PHCPs in this study conducted oral examinations for both children under and above two years of age, they were unfamiliar with the right position of not only children but also themselves. Most of the participants believed that the only way to perform oral screening was to use a dental chair, without which they could not deliver any dental services to children.

Moreover, Ramos-Gomez et al. emphasized that the children's position was important in oral screening and some positions, such as knee-to-knee position, could help care providers perform oral examinations for very young children and uncooperative ones.¹⁷ Furthermore, Shah et al. reported that the child's proper position increased visibility and accessibility and improved the patient's convenience.¹⁸ Other studies have also suggested that all dental providers must be familiar with the proper position for examining children in every age group.^{6,19}

Similar to multiple studies on nurses, pediatric care providers, and pediatric residents, in the current study, PHCPs were unable to distinguish between healthy and inflamed gums, dental plaque and stain, and even caries. They also had some difficulties making decisions about the children's oral hygiene.^{5,20,21} Through accurate assessment of children's oral hygiene, examiners can advise parents on how to improve their tooth brushing skills.¹⁶ Therefore, PHCPs must gather the required information to determine the oral hygiene of children.⁶

Additionally, tooth identification was one of the most important difficulties of all PHCPs. Because of the lack of knowledge and skills of PHCPs in this area, they were unable to differentiate primary molars from permanent premolars and molars. However, no study has

yet evaluated non-dental practitioners' information about the differentiation of primary and permanent teeth.

According to our results, PHCPs were not familiar with white lesions and could not determine the lesion progression. Since dental caries is preventable and treatable, it is vital to detect them at the earliest time possible.²² PHCPs are usually the first members of the health team to observe the early signs of dental decay.²³ Also, PHCPs refer children with dental caries to dentists; therefore, under- or over-diagnosis can cause problems for both children and parents.¹⁶ To prevent such problems, examiners should be able to distinguish between dental stains and white lesions. In this regard, Mohebbi et al. showed that PHCPs had some problems recognizing dental caries.¹³ Pierce et al. also found that nurses and other pediatric care providers had some weaknesses in differentiating dental caries from dental plaques, stains, and calculus.¹⁶

PHCPs, in this study, did not have adequate information about delayed tooth eruption. Accordingly, the normal primary and permanent teeth eruption timetable was presented to the participants. Nevertheless, some of the participants were unaware of the importance of this table or how to use it. The early detection of delayed tooth eruption necessitates the proper education of examiners due to the possibility of early intervention and prevention of subsequent problems.¹⁶ dela Cruz et al. found that examiners should be familiar with the normal time of tooth eruption so that they could identify delayed cases.²⁴

Another topic that PHCPs had inadequate information about was the differentiation of signs and symptoms of tooth eruption in children, such as irritability, pain, diarrhea, and vomiting. Although these signs and symptoms are not severe in many cases, PHCPs should know the actual cause.²⁵ According to different studies, some care providers reported high fever, diarrhea, and vomiting associated with tooth eruption.²⁵⁻²⁷

Detection of dental and facial trauma was another topic that PHCPs needed to increase their information about since this type of trauma may result in dental and skeletal problems.²⁸ The IHS emphasizes asking the parents about the children's history of head and face injuries and identifying new and old signs and symptoms in the oral cavity. Similarly, in a study by Keels, nurses and pediatric care providers had some weaknesses in recognizing the late signs and symptoms of dental and temporomandibular joint (TMJ) traumas.²⁸

After performing oral and dental examinations, it is important to keep the children's dental health records for future comparisons and refer them to dentists, if needed, for further prevention and treatment.^{5,16} For this purpose, PHCPs need to be familiar with the system requirements and know how to record their findings in the IHS database.²⁹ Based on the present results, the participants wanted more information about the discussed topics, such as identifying tooth series and classes, white lesions, dental caries, and signs and symptoms of dental traumas.

In other studies, similar findings have been reported.^{24,30} Golinveaux et al. found that some care providers did not have enough information to complete children's oral health records.⁸ Furthermore, the IHS entails several questions about different aspects of children's oral and dental health, and PHCPs are required to answer all of these questions. Although all of the participants had answered these questions, they did not know the reasons for asking these questions. Considering the importance of preventive measures, PHCPs must know

the reasons behind questions about the family history of dental decay and children's facial and dental traumas.

In this study, PHCPs with different gender, age, educational field and level, work experience, and job performance assessment status had similar concerns and difficulties in providing oral screening for children. As the majority of them had a university degree, it seems that educational courses in university did not cover necessary information about oral health, especially oral screening. On the other hand, the training provided by the health system was not able to meet the real needs of PHCPs in this subject.

Conclusion

PHCPs participating in this study could not perform acceptable oral screening for children and needed more information on how to conduct oral and dental examinations. By providing proper education to meet all the needs of PHCPs and discarding irrelevant topics, the health system may facilitate the delivery of standard oral and dental health services to children.

Conflict of Interests

Authors have no conflict of interest.

Acknowledgments

We would like to thank the financial support of Isfahan University of Medical Sciences for the current study as a part of the dissertation No. 173059. We especially thank the general support of Dr. Kamal Heidari and Dr. Reza Khadivi (current and former chiefs of Isfahan Province Health Center), as well as Ms. Hodjati and her colleagues, Ms. Zahra Abtin, and all PHCPs, participated in the study.

References

1. Petersen PE, Kwan S. The 7th WHO Global Conference on Health Promotion - towards integration of oral health (Nairobi, Kenya 2009). *Community Dent Health* 2010; 27(Suppl 1):129-36.
2. Abou El Fadl R, Blair M, Hassounah S. Integrating maternal and children's oral health promotion into nursing and midwifery practice- A systematic review. *PLoS One* 2016; 11(11): e0166760.
3. Jones JA, Snyder JJ, Gesko DS, Helgeson MJ. Integrated medical-dental delivery systems: Models in a changing environment and their implications for dental education. *J Dent Educ* 2017; 81(9): eS21-eS29.

4. Shimpi N, Schroeder D, Kilsdonk J, Chyou PH, Glurich I, Penniman E, et al. Medical providers' oral health knowledgeability, attitudes, and practice behaviors: An opportunity for interprofessional collaboration. *J Evid Based Dent Pract* 2016; 16(1): 19-29.
5. Kressin NR, Nunn ME, Singh H, Orner MB, Pbert L, Hayes C, et al. Pediatric clinicians can help reduce rates of early childhood caries: Effects of a practice based intervention. *Med Care* 2009; 47(11): 1121-8.
6. Zhu Y, Close K, Zeldin LP, White BA, Rozier RG. Implementation of oral health screening and referral guidelines in primary health care. *JDR Clin Trans Res* 2019; 4(2): 167-77.
7. Kirk CD, Goodson S, Armijo D, Van Harrison R, Makris GJ, Pratap S. Transforming the primary care oral health landscape through quality improvement. *Pediatrics* 2018; 142(1 Meeting Abstract): 426.
8. Golinveaux J, Gerbert B, Cheng J, Duderstadt K, Alkon A, Mullen S, et al. Oral health education for pediatric nurse practitioner students. *J Dent Educ* 2013; 77(5): 581-90.
9. Talib N, Onikul R, Filardi D, Simon S, Sharma V. Effective educational instruction in preventive oral health: Hands-on training versus web-based training. *Pediatrics* 2010; 125(3): 547-53.
10. Petersen PE, Estupinan-Day S, Ndiaye C. WHO's action for continuous improvement in oral health. *Bull World Health Organ* 2005; 83(9): 642.
11. Fairchild R, Everly M, Walters L, Bauer R, Laws S, Anderson L. Rural/remote nurses' continuing education needs: A U.S. Multi-site survey reveals challenges and opportunities. *Journal of Nursing Education and Practice* 2013; 3(5): 45-55.
12. Fitzgerald CE, Townsend RP. Assessing the continuing education needs and preferences of rural nurses. *J Contin Educ Nurs* 2012; 43(9): 420-7.
13. Mohebbi SZ, Rabiei S, Yazdani R, Virtanen I. Investigation of the self-confidence of family physicians and primary care providers regarding dental caries diagnosis and oral health counselling and the associated factors. *J Mashad Dent Sch* 2019; 43(1): 33-44. [In Persian].
14. Eslamian J, Moeini M, Soleimani M. Challenges in nursing continuing education: A qualitative study. *Iran J Nurs Midwifery Res* 2015; 20(3): 378-86.
15. Bayati A, Ghanbari F, Shamsi M. Exploration of the educational needs of health educators and volunteer health care communicators: A qualitative study. *J Arak Uni Med Sci* 2013; 15(10): 21-32. [In Persian].
16. Pierce KM, Rozier RG, Vann WF. Accuracy of pediatric primary care providers' screening and referral for early childhood caries. *Pediatrics* 2002; 109(5): E82.
17. Ramos-Gomez FJ, Crystal YO, Ng MW, Crall JJ, Featherstone JD. Pediatric dental care: Prevention and management protocols based on caries risk assessment. *J Calif Dent Assoc* 2010; 38(10): 746-61.
18. Shah R, Donde R, Mitra D, Rodrigues S, Shetty G, Prithyan S. Oral hygiene tips for infants, toddlers, kids. *World J Adv Sci Res* 2018; 1(2): 16-20.
19. Prakash P, Lawrence HP, Harvey BJ, McIsaac WJ, Limeback H, Leake JL. Early childhood caries and infant oral health: Paediatricians' and family physicians' knowledge, practices and training. *Paediatr Child Health* 2006; 11(3): 151-7.
20. Clark CA, Kent KA, Jackson RD. Open mouth, open mind: Expanding the role of primary care nurse practitioners. *J Pediatr Health Care* 2016; 30(5): 480-8.
21. Braun PA, Racich KW, Ling SB, Ellison MC, Savoie K, Reiner L, et al. Impact of an interprofessional oral health education program on health care professional and practice behaviors: A RE-AIM analysis. *Pediatric Health Med Ther* 2015; 6: 101-9.
22. Ramos-Gomez F, Ng MW. Into the future: Keeping healthy teeth caries free: Pediatric CAMBRA protocols. *J Calif Dent Assoc* 2011; 39(10): 723-33.
23. Nicolae A, Levin L, Wong PD, Dave MG, Taras J, Mistry C, et al. Identification of early childhood caries in primary care settings. *Paediatr Child Health* 2018; 23(2): 111-5.
24. dela Cruz GG, Rozier RG, Slade G. Dental screening and referral of young children by pediatric primary care providers. *Pediatrics* 2004; 114(5): e642-e652.
25. Soares IMV, da Silva AMRB, Moura LFAD, de Lima MDM, Sousa Netto OBS, de Moura MS. Conduct of pediatricians in relation to the oral health of children. *Rev Odontol UNES* 2013; 42(4): 266-72.
26. Memarpour M, Soltanimehr E, Eskandarian T. Signs and symptoms associated with primary tooth eruption: A clinical trial of nonpharmacological remedies. *BMC Oral Health* 2015; 15: 88.
27. Feldens CA, Faraco IM, Ottoni AB, Feldens EG, Vitolo MR. Teething symptoms in the first year of life and associated factors: a cohort study. *J Clin Pediatr Dent* 2010; 34(3): 201-6.
28. Keels MA. Management of dental trauma in a primary care setting. *Pediatrics* 2014; 133(2): e466-e476.
29. Bernstein J, Gebel C, Vargas C, Geltman P, Walter A, Garcia R, et al. Listening to paediatric primary care nurses: A qualitative study of the potential for interprofessional oral health practice in six federally qualified health centres in Massachusetts and Maryland. *BMJ Open* 2017; 7(3): e014124.
30. Manski MC, Parker ME. Early childhood caries: Knowledge, attitudes, and practice behaviors of Maryland dental hygienists. *J Dent Hyg* 2010; 84(4): 190-5.