

# The Role of the Pediatricians in Dental Caries Prevention in Montenegro-the Knowledge, Attitude and Practice

## SUMMARY

**Background/Aim:** Dental caries is the most common chronic disease affecting children worldwide today and represents a serious public health problem. Since pediatricians are the first health professionals whom children visit, they can be considered as a reliable source of information regarding the recognition of potential health problems and suggesting their solution, so they have a key role in primary health prevention. The aim of this study is to determine the position of pediatricians in the prevention of oral health of children in Montenegro through the assessment of their knowledge, attitude, and practice of primary professional preventive measures. **Material and Methods:** A cross-sectional survey was undertaken among the 84 pediatricians employed in Montenegro Community health services. Self-addressed reply envelope survey consisted questionnaire of 60 questions divided into 5 modules, was used as an instrument for the research. **Results:** Response rate was 86%, while 68,3% pediatricians think that gender is a risk factor for dental caries. Fact that cavity-causing bacteria can be transmitted from the mother was confirmed by 69% of respondents. Only 45% of them practice the current guidelines on the recommendation of the first dental examination up to 12 months of life. **Conclusions:** It can be concluded that pediatricians in Montenegro have positive attitudes about prevention and believe they have the responsibility to prevent caries but have shown insufficient knowledge about caries and risk factors for the oral diseases.

**Key words:** Pediatricians - Knowledge, Attitude, Practice, Caries Prevention

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## Introduction

Primary prevention strategies, the most important priority of public health, are based on the recommendation that initiative for the promotion of positive health outcomes should start in early childhood and continue in adulthood<sup>1</sup>. Dental caries as the most common chronic disease affecting children worldwide today represents a serious public health problem. Comparing with other illnesses characteristic for children, dental caries occurs five times more frequently than asthma and seven times more often than fever<sup>2</sup>.

Dental diseases are the result of a bacterial infection most commonly transmitted from the mother to the child at the time of eruption of first tooth between 6 months

and the first year of the child<sup>3</sup>. Presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries) or filled tooth surfaces in any primary tooth in a preschool-age child between birth and 71 months of age is known as Early Childhood Caries (ECC). Frequent consumption of liquids and/or solid foods containing sugar, in particular, sugar-sweetened beverages (e.g., juices, soft drinks, sweetened tea) in a baby bottle or no-spill training cup, ad libitum breast-feeding after the first primary tooth begins to erupt and baby bottle use after 12-18 months, are considered the main risk factors for the ECC<sup>4-7</sup>. As an important risk factors for ECC epidemiological studies documented low socioeconomic status, belonging to a social disadvantaged group, low weight at birth and vertical transmission of Mutans

streptococci (MS) from mother or caregiver to child through salivary contact<sup>8-11</sup>.

Dental caries is a preventable and reversible disease if treated at an early stage, but if not treated it can cause pain, bacteremia, growth and developmental disorders, premature tooth loss, speech disorder, and adverse effects on permanent tooth successor, not to mention increased of treatment costs<sup>12</sup>.

The current overview of the available epidemiological data from many countries clearly shows that there is a significant increase in prevalence of caries and this global increase affects both children and adult, deciduous and permanent teeth and coronary and root areas. The increase of dental caries is the signal of unresolved crisis in public health<sup>13</sup>.

The contributions of health professionals in the field of dentistry, medicine and other related professions are extremely important for raising awareness of oral health and prevention of oral diseases. In both public and private health services, the pediatrician is the first to establish and maintain contact with the child from birth and has a responsibility to inform parents of harmful effects of unhealthy habits, attitudes and practices for a healthy life. Therefore, the pediatrician is in an ideal position to direct parents towards the prevention of oral diseases in children<sup>14-18</sup>. Pediatricians are also well positioned to begin this process by early assessment of the oral health of the child providing them anticipatory guidance, ensuring that children and their families established and maintain good psychophysical and good oral health<sup>19</sup>.

The Pediatric Clinic provides an attractive setting for the detection of early stages of dental illness in very young children. In addition, parents become aware of their child's dental status, which will increase the likelihood that they will seek dental care for their child. These benefits, in turn, can reduce the incidence of dental disease, the need for treatment and hospitalization, and improve the quality of life of a child.

The role of pediatricians in oral health was formalized in a policy issued by the American Academy of Pediatrics in 2003 and reinforced by another policy<sup>20</sup> issued in 2008. Based on the principle that prevention and education are the best way to collectively promote oral health, pediatricians and pediatric dentist are considered to be responsible for preventing and educating parents about the oral health of children. Since the contact they have with their patients have happened before the first year of children's life, mothers are ready to accept their recommendations. The role of pediatricians in controlling caries should include diagnosis, referral to the dentist and the implementation of preventive measures<sup>21,22</sup>.

The results of studies suggest that pediatrician's awareness of their importance in oral hygiene education of children and their parents are satisfactory, but they do not routinely provide advice, and the given advice is often inadequate.

Pediatricians, as the first health professionals who see small children, are in position to educate parents of the way they feed their children and cariogenic potential of bottle feeding after first year of life of their offspring<sup>23</sup>. As the level of cariogenic bacteria in the mother determines the level of these bacteria in the child, it is imperative that pediatricians explain that reducing the level of cariogenic bacteria in the mother's mouth reduces the caries risk in the child<sup>23,24</sup>.

In general, very few studies assessed a role of pediatrician in caries prevention in children or the effectiveness of pediatricians' caries preventive activities<sup>25,26</sup>. The absence of exact statistics on the pediatrician awareness concerning children's caries prevention in Montenegro was a reason to conduct this study.

The main objective of the study was to determine the place of caries prevention in children in Montenegro by assessing the knowledge, attitudes and practical application of professional preventive methods among pediatricians.

## Material and Methods

A cross-sectional study was conducted among the pediatricians in Primary Health care Centers in Montenegro.

### Participants

The list of pediatricians was obtained by the Director of each Primary Health care Center in Montenegro. The study sample was designed as a purposive sample<sup>27</sup>. There were 84 pediatricians who were registered for work with children in 2014. Out of which 70 participated in the study and the validity of their questionnaires was 100%. Response rate was calculated according to formula recommended for this kind of research: Response rate = Number of respondents x 100/ N- sample frame error. According to this calculation, the response rate of the target population was 86,4%

### Questionnaire as a research instrument

Self-administered questionnaire was used as a research instrument in this study. The participants were precisely instructed how to fill out the questionnaire, about the procedure for securing anonymity, and how to return the envelope with the questionnaire to the Institute of Public Health of Montenegro.

Questionnaire consisted of 60 questions divided in five modules. First module consisted the 11 questions concerning demographic information about participants such as their age, gender, type of practice, qualification, in which city they are practicing, number of years in practice, number of working hours per week and number

of patients seen per day, and number of educative hours about Early Childhood Caries (ECC) during their specialistic education.

The second module consisted the questions about the knowledge of pediatricians about the risk factors for oral diseases. Seven risk factors for the following oral diseases: caries, gingivitis, malocclusions were listed, and the offered answers were Yes, No and I don't know. Second module included 4 statements with possible answers True or False and two questions about the concentration of fluoride in drinking water.

The third module considered the attitude of pediatricians on the 20 stated claims concerning caries and caries prevention. A five-step Likert scale was used to assess attitudes, and the degree of agreement was expressed as follows: Strongly Agree, Agree, Indecisive, Disagree, Strongly Disagree.

The fourth module assessed the practice and behavior of pediatricians in relation to specific oral health issues in children. It contained 14 multiple choice questions. The fifth module, of 2 questions, considered pediatricians' awareness of oral disease prevention.

### Statistical analysis

Data analysis was performed with the Statistical Package for Social Science version 17.0 (SPSS 17.0). Descriptive statistics was used to explain basic features in the study (demographical and employment characteristic of the participants). Mann-Whitney test and Kruskal-Wallis test were used to indicate the statistical significance of differences between segments of the studied variables (knowledge and attitude about caries preventive measures between different age groups and different sex of the participants). The degree of correlation between the observed variables was calculated by Spearman correlation coefficient and  $\chi^2$  test was used to determine deviations observed from the obtained frequencies.

## Results

### Demographic characteristics of the participants

Age range of the participants varied from 33 to 68 years, and 16,7 % of the pediatricians was aged 53. The average age of pediatricians was almost 52 years. According to the gender distribution, 83% of the pediatricians in Montenegro are females. Occupational record ranged from 7 to 42 years, with an average value of 24,96 years. Most of the participants (11,6%) have an occupational record of 30 years (Table 1).

Table 1. Overview of the average age of pediatricians, distribution by gender and years of service

Statistics	Age		Gender		Years of service	
	Age	No	%	Statistics	Years of service	
Average	51,86	Male	11	16,7%	Average	24,96
Min	33	Female	55	83,3%	Min	7
Max	68	Total	66	100,0%	Max	42

Working week lasts more than 40 hours for 58% of pediatricians in Montenegro and 27 of them or 39% worked up to 40 h per week. Almost 60% of the participants examined more than 40 patients per day, while other 40% pediatricians see up to 40 patients per day. One quarter of respondents (18 or 25,7%) stated that the average number of patients examined per working day is 50 patients.

Most of the participants 71% of them, claimed that during the postgraduate internship up to 20 h of all educational program was dedicated to education about childrens' oral health. Twenty or 29% of respondents stated that they had more than 20 h of education about the oral health in children.

Table 2. Evaluation of knowledge about the effects of the risk factors to the development of dental caries, gingivitis and malocclusion

Risk factor	Dental caries Response				Gingivitis Response				Malocclusion Response			
	True		False		True		False		True		False	
	N	%	N	%	N	%	N	%	N	%	N	%
Sex	41	68,3%	19	31,7%	35	61,4%	22	38,6%	34	58,%	24	41,%
Familial / genetic predisposition	9	15,3%	50	84,7%	29	53,7%	25	46,3%	45	81,8%	10	18,2%
Frequency of sugar consumption	57	87,7%	8	12,3%	38	69,1%	17	30,9%	31	59,6%	21	40,4%
Bottle feeding	52	81,3%	12	18,8%	17	30,9%	38	69,1%	38	70,0%	16	29,6%
Non-physiological sucking habits	15	23,8%	48	76,2%	/	/	/	/	36	65,5%	19	34,5%
Poor oral hygiene / inadequate brushing	62	93,9%	4	6,10%	54	90,0%	6	10,0%	34	64,2%	19	35,8%
Malpositioned teeth	42	67,7%	20	32,3%	39	66,1%	20	33,9%	43	76,8%	13	23,2%

## Knowledge

Knowledge about risk factors for oral diseases among pediatricians in Montenegro were shown in Table 2.

When it comes to the risk factors of dental caries, the pediatricians showed the appropriate level of knowledge, and that for most of the risk factors listed in the questionnaire, the majority of respondents answered correctly. A high percentage (94%) of pediatricians correctly answered that poor oral hygiene / inadequate tooth brushing was a risk factor for developing caries, and 88% correctly answered that the risk factor for developing caries was the frequency of sugar consumption. Great majority (81%) of pediatricians answered that bottle feeding can cause dental caries, and 68% of them answered correctly that malposition of the tooth is a risk factor for the development of dental caries. Interestingly, 68% of pediatricians answered that the gender is the risk factor for the development of dental caries. Most of the respondents (90%) thought that inadequate tooth brushing and poor oral hygiene can lead to gingivitis. More than half respondents (54%) thought that family/genetic predisposition is a cause of gingivitis, and 69% of them, as a risk factor for the development of gingivitis stated frequent sugar intake. High percentage of the respondents (61%) marked the gender as a risk factor for the development of the gingivitis.

Most of the respondents correctly answered the questions regarding the development of orthodontic anomalies. Family/genetic predisposition as an important factor for the development of the dental anomalies recognized 82% of the respondents and for the 77% of them malposition of the tooth is an important factor of the orthodontic anomalies. For the 70% of participants bottle feeding and for the 66% of them non-nutritive sucking habits can be considered as a risk factor for the orthodontic anomalies. More than half of the respondents (59%) thought that gender is a risk factor for the development of the orthodontic anomalies. Most of the pediatricians (69%) answered correctly that the cariogenic bacteria can be transmitted from mother to the child.

Generally speaking, most of the pediatricians recognized the most important risk factors for the development of dental caries, gingivitis and orofacial anomalies.

Most of the respondents don't know the concentration of the fluoride in drinking water in Montenegro and 73% gave incorrect answer. Only one of the respondents gave the correct answer about optimal

concentration of fluoride in drinking water which can be considered caries preventive (Table 3).

*Table 3. Assessment of knowledge by responding to the offered assertions about the fluoride concentration in drinking water in Montenegro and optimal fluoride concentration for prevention of dental caries*

	Do you know the concentration of fluoride in drinking water in Montenegro?		Do you know what is the optimal concentration of fluoride in drinking water for prevention of dental caries?		
	N	%	N	%	
Incorrect answer	49	73,1	Yes	16	24,6
Correct answer	18	26,9	No	49	75,4
Total	67	100,0	Total	65	100,0

## Attitude

Attitude of pediatricians towards prevention of dental caries was tabulated in Table 4. Almost all of participants (97,1%) agreed with the statement "Caries is an infectious disease that can be prevented, and it is ideal to start with preventive measures as soon as possible, so it is most important that preventive measures include pregnant women and children in the first year of life."

Great majority of the respondents (94,2%) agree that the proper growth and development of a child cannot be imagined without well-defined prevention programs that include the preservation of the deciduous teeth and trained staff to implement these programs.

Mean value ranges from 1,69 to 2,97 while the standard deviation values are in the range 0,169 to 0,96 indicating that the respondents gave more neutral to the affirmative answers (Table 4). Mann-Whitney test ( $p>0,5$ ) and Kruskal-Walis test ( $p<0,01$ ) showed that there is no statistical difference in attitudes among the participants concerning caries preventive measures between different age groups, different gender of the participants as well as difference in working hours per week and number of the patients per week.

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Table 4. Distribution of pediatricians' attitudes about caries prevention

ASSERTION	Neither agree nor disagree			AM*	Std**
	Disagree No. %	nor disagree No. %	Agree No. %		
1. Pediatricians play an important part in caries prevention	1 1,5%	3 4,4%	64 94,1%	<b>2,93</b>	<b>,315</b>
2. Pediatricians should be able to perform a complete oral cavity examination.	27 40,3%	7 10,4%	33 49,3%	<b>2,09</b>	<b>,315</b>
3. Poor oral health of a child is an obstacle to proper growth and development.	4 5,9%	2 2,9%	62 91,2%	2,85	,497
4. Medical education curriculum should include more education on oral health care and prevention in children	0 0,0%	4 5,7%	66 94,3%	<b>2,94</b>	<b>,234</b>
5. Training pediatricians to develop skills to apply caries preventive procedures would be worth the effort.	6 8,7%	4 5,8%	59 85,5%	<b>2,77</b>	<b>,598</b>
6. Prophylactic fluoride administration, bearing minimal risk, is the best and most effective caries preventive procedure.	11 16,2%	6 8,8%	51 75,0%	2,77	,758
7. I feel that I am not sufficiently trained to apply caries preventive procedures in my daily work.	37 54,4%	10 14,7%	21 30,9%	<b>1,76</b>	<b>,900</b>
8. The proper development of a child cannot be envisaged without well-defined prevention programs that include preventive strategy for deciduous dentition and without sufficiently trained staff to implement that.	1 1,4%	3 4,3%	65 94,2%	<b>2,93</b>	<b>,312</b>
9. Providing preventive dental health care services should be left entirely to the dentist.	40 57,1%	12 17,1%	18 25,7%	<b>1,69</b>	<b>,860</b>
10. Caries is a preventable disease and it is ideal to start with preventive measures as early as possible, i.e. it is of utter importance to engage pregnant women and children in their first year of life in preventive oral health programs.	0 0,0%	2 2,9%	67 97,1%	<b>2,97</b>	<b>,169</b>
11. The law requires that fluoride supplements for children are prescribed by pediatricians, and I believe that this should definitely be removed from their competencies in the domain of pediatric patient care.	32 45,7%	22 31,4%	16 22,9%	<b>1,77</b>	<b>,802</b>
12. I don't feel comfortable talking about caries prevention.	18 25,7%	6 8,6%	46 65,7%	<b>2,40</b>	<b>,875</b>
13. Preventive dental care including giving advice on proper nutrition, oral hygiene and the importance of dental health of children, I provide only at the request of parents.	14 20,9%	1 1,5%	52 77,6%	<b>2,57</b>	<b>,821</b>
14. My knowledge of oral hygiene is quite sufficient.	18 26,1%	10 14,5%	41 59,4%	<b>2,33</b>	<b>,869</b>
15. Whenever I can, I obtain information about caries prevention measures for both my own children and patients.	3 4,3%	5 7,1%	62 88,6%	<b>2,84</b>	<b>,470</b>
16. The pediatrician's work with parents and young children in terms of caries prevention is stimulating and satisfying.	6 8,7%	21 30,4%	42 60,9%	2,52	,655
17. It is always uncomfortable for me, and I avoid telling mothers that early childhood caries is caused by cariogenic bacteria and that the source of initial infection with these bacteria is mostly through mother, and also by a bad habit such as bedtime bottle with sweetened foods / beverages and sleeping with a bottle.	12 17,4%	7 10,1%	50 72,5%	<b>2,55</b>	<b>,777</b>
18. The oral health of young children is the foundation upon which oral health care rests, therefore it is of the utmost importance for the child to have a first dental visit by age one or within six months after the first tooth erupts, and whenever I can, I advise parents accordingly.	6 8,6%	1 1,4%	63 90,0%	<b>2,81</b>	<b>,572</b>
19. Providing parents and patients with information and guidance on proper dental health care and emphasizing the importance of timely dental visits takes too much time for the pediatrician.	27 38,6%	5 7,1%	38 54,3%	<b>2,16</b>	<b>,958</b>
20. Oral health preventive care for children should be unavoidable part in the preparation of additional training and educational programs for pediatricians	13 18,6%	11 15,7%	46 65,7%	<b>2,47</b>	<b>,793</b>

AM\* – arithmetic mean

Std\*\* – standard deviation

## Practice

Majority of participants (85%) assesses dietary habits of their patients during their everyday practice. More than two third of pediatricians evaluate oral health of their patients during their routine examination, and almost one fourth of them assessment of oral health of their patients performed on their parent's request (Table 5).

Table 5. Pediatrician's practice towards the assessment of dietary habits and evaluation of oral health of their patients

No.	QUESTION	No.	%
1.	Do you assess dietary habits of your patients during your everyday practice ?		
a	Yes, always	56	84,8
b	No	10	15,2
Total		66	100,0
2.	Do you routinely evaluate oral health of your patients?		
a	Yes, always	42	67,7
b	No	4	6,5
c	Only at the parents request	1	1,6
d	Only if patient have a problem	14	22,6
Total		62	100,0

This study indicates that 30% of participants perform oral examination of their patients during their first year of life while 20% of pediatricians state that they don't perform oral examination of their patients. Two thirds of the participants recommended oral examination every six months while one fifth of them think that oral examinations for the little patients should be performed once a year (Table 6).

Table 6. Pediatrician's practice towards a recommendation for the frequency of dental visit for a children

How often do you recommend an oral examination for your patients?	No.	%
Once a year	12	19,4
Every six months	41	66,1
Every four months	3	4,8
Every month	4	6,5
Only if patient have a problem	1	1,6
Total	62	100,0

Most of the participants (76%) recommended fluoride supplements to their patients.

Great majority of the pediatricians included in this study (97%) counsel the parents about the importance of proper oral hygiene, while 82% of them recommended the parents to wash/clean their children's teeth twice a day, and 75% of them recommended fluoride dentifrices. Great percentage of participants (75%) were not informed about mother's dental health, and 67% of them did not provide parents with guidance on topical fluoride administration (Table 7).

Table 7. Pediatrician's practice about the recommendation related to a caries prevention

QUESTION	YES		NO	
	No.	%	No.	%
1. Do you take the information about the mother's oral health?	17	25,4%	50	74,6%
2. Do you ask the parents what kind of water their child drinks?	38	56,7%	29	43,3%
3. Do you suggest parents to use the toothpaste with fluoride?	50	74,6%	17	25,4%
4. Do you advise parents on topical administration of fluoride?	21	32,8%	43	67,2%
5. Do you recommend parents to brush their children's teeth?	55	82,1%	12	17,9%
6. Do you counsel the other ways to prevent caries?	48	71,6%	19	28,4%
7. Do you inform the parents about the importance of oral hygiene?	65	97,0%	2	3,0%

## Discussion

Very few studies have been conducted on dental screening and referrals by pediatrician's or the effectiveness of their dental caries preventive activities. That's why the results of this study are very important despite possible limitation of this type of study.

This is the first study in Montenegro which analyzed data from a nationally representative sample of pediatricians for the purpose of assessing their knowledge, attitudes and practices in preventing caries in children. The present study focuses on the crucial oral preventive role of pediatricians who are considered the primary link between dentists and children. Therefore, the results of present study provide a valuable impetus and perspective for the formulation of relevant educational programs for pediatricians in the field of caries prevention for children.

The comparison of the results of internationally conducted research among pediatricians has shown that there are some similarities and some differences between them<sup>28-30</sup>, which is in line with the results of present study. Great majority of the respondents in present study knew all the main risk factors of dental caries. Pediatricians in Montenegro are aware of the fact that the frequency of sugar consumption of sugar-rich foods and inadequate tooth brushing can lead to development of caries and gingivitis. Those results correspond with the results of similar study conducted in Italy<sup>1</sup>, but comparing with the Italian study where 71% of pediatricians didn't know that bottle

feeding have a harmful effect on develop of malocclusion, 70% of the pediatricians in present study recognize that risk factor.

Is more likely that the pediatrician who is aware that bottle feeding is a risk for oral health will take a more important role in maintaining the oral health of a child than those who do not. From a public health perspective, these are key issues, as they indirectly indicate whether pediatricians are aware of specific oral health issues of the child and whether more work is needed to educate them<sup>1</sup>.

Studies emphasize that it is very important to know what pediatricians' attitudes are about their role in the prevention of oral diseases<sup>28</sup>. Present study helped to gain insight and describe the awareness that pediatricians have towards oral health care. According to the results of a present study, it can be concluded that pediatricians have proactive attitude towards oral health, but they need more information about the importance of fluoride in controlling caries<sup>21</sup>. This survey indicates that pediatricians in Montenegro agreed that they have an important role in the promotion of oral health and responsibility in caries prevention which is consistent with the findings of other studies<sup>1,25,30-32</sup>.

The study conducted in USA indicates that pediatricians believe that they have an important role in the promotion of oral health, but the lack of up-to-date information about the difficulties the pediatricians have noted in referring patients to the dentist calls into question the level of their effectiveness in promoting the oral health of children<sup>16</sup>.

Almost all respondents (97%) agree that caries is an infectious disease that can be prevented, and that preventive measures should be started as soon as possible. They also agreed that it is most important that preventive measures include pregnant women and that the first year of life would be ideal for the first dental visit. There were no respondents who expressed disagreement with this claim. Because risk factors are common to many childhood diseases including caries, it is very important for pediatricians to know this and, more importantly, to know that dental diseases are preventable.

Majority of participants (85%) assesses dietary habits of their patients during their everyday practice, which is in accordance with previously conducted studies<sup>1</sup>. More than two third of pediatricians (67,7%) evaluate oral health of their patients during their routine examination which is less than the results in other studies and far more less comparing with the study conducted in USA 2004. Where 98,9% of pediatricians usually evaluate oral health of their patients during their routine examination<sup>32</sup>.

This is important because by routine examination of oral cavity during physical examination, pediatricians can diagnose the early stages of caries and the child can be referred immediately to the dentist for further treatment. According to findings of present study 22,6%

of pediatricians evaluate the oral health of children only in patients who have a problem.

Recommendation of American Academy Pediatric Dentistry (AAPD) is establishing a dental home within six months of eruption of the first tooth and no later than 12 months of age to conduct a caries risk assessment and provide parental education including anticipatory guidance for prevention of oral diseases<sup>33</sup>.

Less than half of the pediatricians in present study (45%), recommended first oral screenings within the first year of life, which is better result than the results of other studies in which first oral screening within the first year of life was recommended by 15% of pediatricians<sup>16</sup> respectively 17% of pediatricians<sup>34</sup>. Those findings suggested that most of the participants in present study are not familiar with the contemporary guidelines. Around 10% of the participants do not recommended first oral screening during the routine pediatric annual check-up.

Pediatricians are considered to be in a unique position to provide preventive oral information because of the early age at which children are brought to their offices. In present study almost all participants (97%) provide the information about the importance of oral hygiene for their patients. Majority of the pediatricians (82%) instructed the parents to brush their children's teeth and 72% of them provided the information about usage of fluoride tooth pastes. Those results correspond with the results of similar studies<sup>24,28</sup>. Most of the participants do not take the information about mother's oral health (75%) which is in accordance with the results of similar studies<sup>16</sup>. It can be considered that pediatricians who missed to provide adequate information regarding oral health and prevention of various oral diseases create the wrong image that prevention of oral health is not so important.

Most of the participants (76%) recommended fluoride supplements to their patients which is less than the results of the study conducted in Italy where 89% of the pediatricians included in the study recommended fluoride supplements to their patients<sup>1</sup>. The results of the similar study conducted in Iran shows that most of their pediatricians do not recommended fluoride supplements to their patients and Balaban et al. concluded that great majority of their participants 98,9% miss to recommend fluoride supplements to their patients<sup>28,35</sup>. Having in mind the importance of fluoride supplementation in caries prevention it is of great importance that pediatricians, who are more likely to see a child in the first two years of life have opportunities to discuss fluoride supplementation with parents.

## Conclusions

Based on results previously presented in the study it can be concluded that most of the pediatricians in

Montenegro had a positive attitude towards prevention of oral diseases, and satisfactory knowledge and awareness about the risk factors for dental caries. This survey indicates that pediatricians believe that they have an important role in the prevention of oral health. Fact that pediatricians are not familiar with oral health issues may makes it difficult for them to promote prevention of dental caries.

Ongoing education programs and the inclusion of oral health prevention programs in pediatric primary care can help bridge the gap between dentists and pediatricians. As a result of better communication and collaboration, pediatricians could participate as a partner group in promoting children's oral health. Systemic oral health preventive measures included in primary health care for children and adolescents will yield better results and require less resources.

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