

# First Dental Visit - Attitudes, Knowledge, and Competence of Bulgarian dentists

Ralitsa Bogovska-Gigova<sup>1</sup>, Rossitza Kabaktchieva<sup>2</sup>

Department of Pediatric Dentistry, Faculty of Dental Medicine, Medical University- Sofia

## Abstract

**Introduction:** The American Academy of Paediatric Dentistry recognizes the concept of dental visits of children of 1 year of age. The first dental visit based on a special protocol provides for the development of preventive habits and health culture fostering the overall oral health and wellness. The **purpose** of this study was to determine the attitudes, knowledge, and competence of Bulgarian dentists regarding the work with children up to 3 years of age.

**Materials and methods:** A web-based self-administered survey with 6 questions was distributed to 500 dentists in Bulgaria. To provide dissemination and completion of the questionnaire, we used Google Forms and online access to the questionnaire. It included questions relating to the dentists' awareness of the recommendations of the global guidelines on the examination and treatment of young children. **Results:** Significantly more colleagues (77.60%) were not aware of the concept of the Dental Home. Almost half of the dentists see children below the age of three. Most dentists believe that the reason for the delayed first dental visit is in the parents. Most colleagues support global trends and believe that the first dental examination should take place before the first birthday.

**Conclusion:** Most of the dentists in Bulgaria are convinced of the need for a first dental examination before the age of 1, but the concept of the Dental Home with its philosophy, principles, and policy is not well known.

**Keywords:** dental home, first dental visit, dentists

## Introduction

The dental home is the ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated, and family-centered

way (1). The dental home should be established no later than 12 months of age (1). The American Academy of Paediatric Dentistry recognizes the concept of dental visits of children of 1 year of age (2). The American Academy of Paediatrics states that the referral of a child to a dentist for the establishment of a dental home (by 1 year of age) provides an opportunity for the prevention of the most common oral diseases and the development of oral habits that meet each child's unique needs (3). The first dental visit based on a special protocol provides for the development of preventive habits and health culture (4, 5).

The Royal College of Surgeons of England reports that caries is the most common disease and the early detection of carious lesions is essential for its reversal. The most recent studies confirm the efficiency of regular dental home visits in the prevention of early childhood caries (6). This approach is reported to be conducive in the attitude to oral health since the child receives appropriate preventive and routine oral health care, thereby reducing the risk of preventable dental diseases (7).

Several studies recommend an early dental visit, ideally before the child reaches the age of 12 months (8, 9). Early visits make it possible for the appropriate preventive care to be provided on time and create health awareness, responsibility, and motivation for the parents. For all these reasons the establishment of a Dental Home could produce long-term benefits for the child and his or her oral health. Research has proven that children who had their first preventive dental visit before the age of 18 months are less likely to have subsequent restorative or emergency visits and incur fewer dental costs (10, 11). Few dental practitioners are aware of or implement the recommendations on early dental visits (12, 13, 14). Ramoz-Gomez et al. have published an article to remind dentists of the guidelines and protocols for the first dental visit of a child (4).

## Aim

The purpose of this study was to determine the attitudes, knowledge, and competence of Bulgarian dentists regarding the work with children up to 3 years of age.

## Materials and methods

A web-based self-administered survey with 6 questions was distributed to 500 dentists in Bulgaria. To provide dissemination and completion of the questionnaire, we used Google Forms and online access at: <https://docs.google.com/forms/d/e/1FAIpQLSf7QJeMyQTAJ4wYQZ2eYmWMHP9IjkSMHATgFLpKabQ96TYsrg/viewform>, which we e-mailed to the dentists. The questionnaire included questions relating to the dentists' awareness of and attitude to the recommendations of the AAPD and ADA on examination and treatment of young children. The criteria applied to the processing of the data collected in the survey were the following: distribution by gender, work experience and specialty (if any), and affiliation with the National Health Insurance Fund. The anonymity of the participants and the confidentiality of their responses were guaranteed. The registered data were processed statistically with the SPSS software (version 19, SPSS Inc., USA).

## Results

A total of 366 dentists completed the survey, resulting in a response rate of 73.20%. Significantly greater was the share of females - 75.96% and 24.04% of males ( $T=16.43$ ,  $p<0.05$ ). The dentists were grouped into four subgroups depending on their work experience: 76 (20.77%) had less than 5 years of work experience; 106 (28.96%) had work experience ranging from 6 to 10 years; 54 (14.75%) had work experience ranging

from 10 to 20 years, and 130 (35.52%) had work experience of more than 20 years. Participants who do not have a specialty were 282 (77.05%) and their number was significantly greater than the number of dentists with a specialty ( $T=17.40$ ,  $p<0.05$ ). The dentists who were affiliated with the National Health Insurance Fund accounted for 81.42% of all respondents, while 18.58% work on a free medical practice ( $T=21.86$ ,  $p<0.05$ ). The results from the answers to the first question of the survey are summarized in Table 1.

**Table 1. Answers of dentists to Question 1 of the survey**

Question Answer	Do you know what Dental Home means and what is its role?					
	Yes		No		Partially	
Work experience	n	% +/- sp	n	% +/- sp	n	% +/- sp
0–5 years (1)	8	10.53 +/- 3.52	62	81.58 +/- 4.45	6	7.89 +/- 3.09
6–10 years (2)	14	13.21 +/- 3.29	76	71.70 +/- 4.38	16	15.09 +/- 3.48
10–20 years (3)	4	7.41 +/- 3.56	48	88.89 +/- 4.28	2	3.70 +/- 2.57
Over 20 years (4)	10	7.69 +/- 2.34	98	75.38 +/- 3.78	22	16.92 +/- 3.29
<b>Total</b>	<b>36</b>	<b>9.84 +/- 2.20</b>	<b>284</b>	<b>77.60 +/- 3.08</b>	<b>46</b>	<b>12.57 +/- 2.45</b>

The results show that significantly more colleagues (77.60%) were not aware of the concept of the Dental Home ( $T=17.89$ ,  $p<0.05$ ). Approximately 13% of the dentists know the role of a Dental Home only partially and these results are significantly less than the share of the group that gives a negative response to the question ( $T=16.51$ ,  $p<0.05$ ). Only 10% of the respondents answer the question in the affirmative. Dentists who are familiar with the concept are approximately the same number in the respective subgroups with different work experiences.

The second question from the questionnaire summarizes information on how many of our colleagues accept children under the age of 3 for examination or treatment.

**Table 2. Answers of dentists to Question 2 of the survey**

Question Answer	Do you examine/treat children below the age of three in your practice?					
	Yes		No		Very rarely	
Work experience	n	% +/- sp	n	% +/- sp	n	% +/- sp
0–5 years (1)	44	57.89 +/- 5.66	8	10.53 +/- 3.52	24	31.58 +/- 5.33
6–10 years (2)	58	54.72 +/- 4.83	10	9.43 +/- 2.84	38	35.85 +/- 4.66
10–20 years (3)	30	55.56 +/- 6.76	14	25.93 +/- 5.96	10	18.52 +/- 5.29
Over 20 years (4)	50	38.46 +/- 4.27	34	26.15 +/- 3.85	46	35.38 +/- 4.19
<b>Total</b>	<b>182</b>	<b>49.73 +/- 3.70</b>	<b>66</b>	<b>18.03 +/- 2.84</b>	<b>118</b>	<b>32.24 +/- 3.46</b>

The results show that almost half of the dentists see children below the age of three. Colleagues with long-term work experience who answered the question "No" are significantly more than colleagues with less experience. Young colleagues are more inclined to work with children, probably due to their good education from university and the desire to work and develop in all areas of dental medicine.

The third question was answered by 184 dentists (tab.3).

**Table 3. Answers of dentists to Question 3 of the survey**

Reasons for not receiving/treating children below the age of three?									
Parents do not take their young children to the dentist (1)		I work and develop in another field of dentistry (2)		I do not feel prepared to work with such young children (3)		Children should be patients of dentists with a specialty in pediatric dentistry (4)		Other reasons (5)	
N	% +/- sp	n	% +/- sp	n	% +/- sp	n	% +/- sp	n	% +/- sp
86	46.74+/-3.68	46	25.00+/-3.19	42	22.83+/-3.09	5	2.72 +/- 1.20	5	2.72+/-1.20

Most of the dentists (almost 47%) believe that the reason is for the parents who do not take their children early for examination and prevention. About 23% do not feel prepared to work with such young children and about 3% believe that children should be patients of dentists with a specialty in pediatric dentistry. Approximately 25% of the participants report that they have other priorities in their practice and around 3% give other reasons.

Through the answers to question 4 of the questionnaire (Table 4), we want to know whether colleagues are familiar with the global guidelines.

**Table 4. Answers of dentists to Question 4 of the survey**

Question	Do you know about the recommendations of the ADA and AAPD that the first dental visit should take place by 12 months of age?				t-test
Answer	Yes		No		Total
Work experience	n	% +/- sp	n	% +/- sp	n
0–5 years	62	81.58 +/- 4.45	14	18.42 +/- 4.45	76
6–10 years	86	81.13 +/- 3.80	20	18.87 +/- 3.80	106
10–20 years	32	59.26 +/- 6.69	22	4.74 +/- 6.69	54
Over 20 years	40	30.77 +/- 4.05	90	69.23 +/- 4.05	130
Total	220	60.11 +/- 2.56	146	39.89 +/- 2.56	366

The results indicate that 60.1% of the dentists are aware of the global recommendations (T=5.59, p<0.05). We also asked our colleagues about their personal opinion on the first visit of a child to a dentist. The results can be seen in table 5.

**Table 5. Answers of dentists to Questions 5 of the survey**

When should the first dental visit take place in your opinion?									
By 12 months of age (1)		At the age of 1 year (2)		At the age of 2 years (3)		At the age of 3 years (4)		In case of complaint or emergency (5)	
n	% +/- sp	n	% +/- sp	n	% +/- sp	n	% +/- sp	n	% +/- sp
128	34.97+/-2.49	136	37.16+/-2.53	42	11.48+/-1.67	60	16.39+/-1.94	0	0

Most colleagues (72.13% - groups 1 and 2) support global trends and believe that the first dental examination should take place before the first birthday of the child. No colleague believes that a dentist should be visited at the child's first complaint.

We checked the competence of dentists in performing the first examination of a child under 3 years of age. Answers are given in Chart 1.

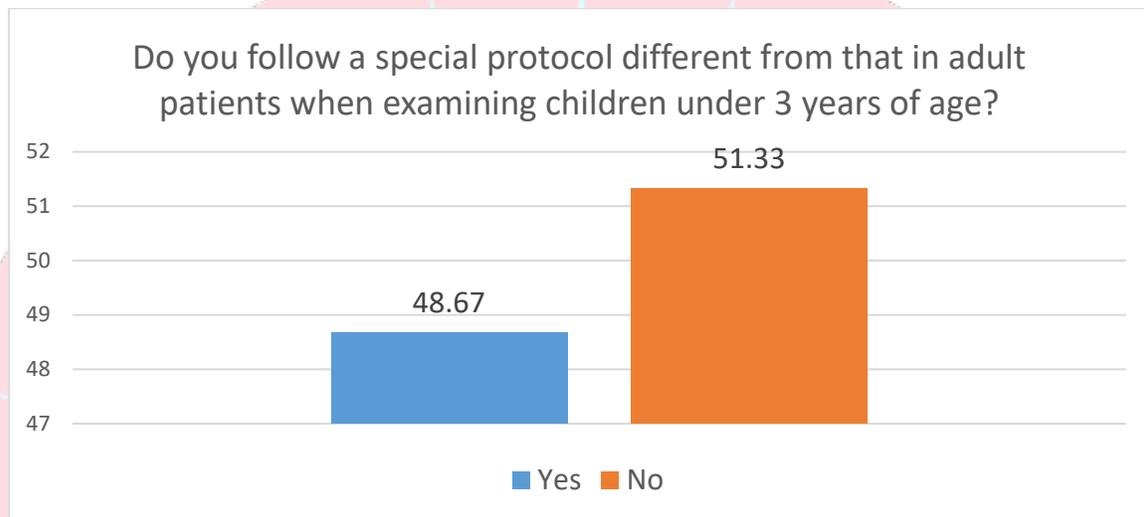


Chart 1. Answers to question 6 of the questionnaire

The data show that colleagues who work with children under three with a special and different protocol than adults are almost on par with colleagues who do not ( $t = 0.65$ ,  $p > 0.05$ ).

## Discussion

The dental home is defined as a sustained interaction of dentist and patient covering all aspects of oral healthcare and providing continuous, comprehensive, accessible, coordinated, and family-oriented care (11, 15). The dental home is not a new concept in the world literature and practice, and it holds a strong promise that it will improve the oral health of children (7). Our survey has found out that over 75% of dentists in Bulgaria are not aware of the policy of the Dental Home. The American Academy of Pediatric Dentistry emphasized that the Dental Home provides ample opportunities for assessing and maintaining the oral health of children, as well as strategies to prevent the risk of oral diseases. The establishment of a Dental home ensures appropriate oral healthcare for children, thus reducing the spread of some oral diseases, such as early childhood caries (15).

A report summarizing a meeting of experts in the field was published in 2008 to define the concept of Dental Home (16). It reports that general dentists in the United States are still more often involved in the care and treatment of the elderly population and a much smaller proportion of their patients are children (16, 17).

In 2010, the Manitoba Dental Association (Canada) implemented the Free First Visit (FFV) program to provide access to dental screening for children under 3 years of age and to promote the concept of dental examination at the age of 1 (18, 19, 20). Dentists see the program as a good measure of public health and a way to attract more young children to early dental visits. They believe that the FFV program helps educate parents and promotes caries prevention (19, 20). Many dentists agree that a free first dental examination of

a child takes only a few minutes and does not complicate the work process (6). In Bulgaria, unfortunately, a health oral program for the prevention of the youngest children up to 3 years of age do not exist either at the national or regional level.

In Ohio, a study was conducted on the attitude of general dentists and pediatric dentists towards incorporating the concept of the Dental Home into their practices (21). The results show that in both groups over 90% of dentists have already done it or intend to do it (21). These results are significantly higher than ours, but it should be mentioned that the Dental Home is an AAPD policy, and over 94% of pediatric dentists in America are members of this association. The data from our sample showed that over 50% of colleagues do not accept children under three years of age in their practice or do it very rarely (Table 2). In Bulgaria, the principles of the Dental Home have not yet been widely promoted. Bulgarian health institutions also remain silent on initiatives concerning the youngest children.

The study of Sanguida et al. revealed that the most common reason for parents not to take their child for early dental visits was thinking that the child did not have any dental problems (55%) (22). This could be due to a low level of awareness of the process of dental caries formation (22). Our survey shows that 46% of the dentists admitted that they did not work with young children precisely because parents did not come for an early consultation. Parents play a crucial role in the upbringing and education of their children about healthy oral habits. The oral and overall health condition of children is often affected by their parents' misconceptions and wrong attitudes to oral health (14). In a survey in Bulgaria in 2014, the researchers noted that the respondents did not have the first dental visit of their child before the age of 12 months (23). The most common cause was children receiving their first dental visit between 3 and 6 years of age (51.90%) and the percentage of children below the age of 12 months was the lowest (only 1.73%) (23). These results are indicative of the level of the parent's awareness of the appropriate age for the first dental visit. A recent study revealed low awareness about the age of the first dental visit (24). A high proportion of parents (75%) did not know that 6 months was the right time for the first dental visit (24). The number of dentists in Bulgaria recommending a first dental visit by the age of 12 months is small (17.93%) (23). Our data pointed that over 70% of dentists believed that the first dental visit had to take place by or around the age of 12 months. A Canadian survey showed that Canadian dentists responding to it were not aware of the ADA recommendations and recommended a first visit by 24.8 months of age on average (13). Several studies have established that only 22.7% of pediatricians and general practitioners recommend a first dental visit by two years of age. The efforts to promote early prevention should focus also on parents and the whole healthcare team around expecting mothers and infants (24).

On the other hand, our survey indicates that only 50% of dentists confirmed that they worked with children below the age of three. A survey among dentists in New York City reported that less than one-half (47%) of general dentists examined children aged 0 through 2 years in their practice (25). It becomes clear that although dentists recommend an early dental visit and believe that it should take place by the age of 12 months of age, only a small percentage of them will implement this recommendation in practice.

Oral examination for a newborn or young child is the first important step towards excellent oral health throughout life (26). This first dental examination should be simple, brief, and yet adequate (26). However, it appears that examining a baby during this first visit may be a challenge for the dentist (27). In our study, we found that 48.67% of colleagues comply with the specifics of this early childhood and follow a special protocol when examining a child under 3 years (chart 1). General practitioners often admit that they are too busy practising with older patients and do not have time to examine babies (28). Dentists also claim that because they cannot charge their young patients for their IOHE - Infant oral health examination - working with such patients is not cost-effective for them (28). Another study found that only 53% of respondents see 1-year-olds in their dental practices (29). An effort is needed to continue to increase the percentage of dentists who offer dental care to the youngest patients.

## Conclusion

Early oral care for children under 3 is not a priority for dentists in Bulgaria. Most of them are convinced of the need for a first dental examination before the age of 1, but the concept of the Dental Home with its philosophy, principles, and policy is not well known and developed by Bulgarian dentists.

## References

1. American Academy of Pediatric Dentistry. Definition of dental home. The Reference Manual of Pediatric Dentistry. Chicago, Ill.: American Academy of Pediatric Dentistry; 2021:15.
2. American Academy of Pediatric Dentistry. Clinical Affairs Committee--Infant Oral Health Subcommittee. Guideline on infant oral health care. *Pediatr Dent*. 2012;34(5):e148-52.
3. Hale KJ. American Academy of Pediatrics Section on Pediatric Dentistry. Oral health risk assessment timing and establishment of the dental home. *Pediatrics*. 2003;111(5 Pt 1):1113-6.
4. Ramos-Gomez FJ, Crystal YO, Wai M, 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.
5. Ramos-Gomez FJ. A model for community-based pediatric oral health: implementation of an infant oral care program. *Int J Dent*. 2014;2014:156821.
6. Policy on Workforce Issues and Delivery of Oral Health Care Services in a Dental Home. *Pediatr Dent*. 2016;38(6):27-31.
7. Girish Babu KL, Doddamani GM. Dental home: Patient centered dentistry. *J Int Soc Prev Community Dent*. 2012;2(1):8-12.
8. Nainar SM, Straffon LH. Targeting of the year one dental visit for United States children. *Int J Paediatr Dent*. 2003;13(4):258-263.
9. Douglass JM, Douglass AB, Silk HJ. Infant oral health education for pediatric and family practice residents. *Pediatr Dent*. 2005;27(4):284-291.
10. Savage MF, Lee JY, Kotch JB, Vann WF Jr. Early preventive dental visits: effects on subsequent utilization and costs. *Pediatrics*. 2004;114(4):e418-e423.
11. Nowak AJ, Casamassimo PS, Scott J, Moulton R. Do early dental visits reduce treatment and treatment costs for children?. *Pediatr Dent*. 2014;36(7):489-493.
12. Wolfe JD, Weber-Gasparoni K, Kanellis MJ, Qian F. Survey of Iowa general dentists regarding the age 1 dental visit. *Pediatr Dent*. 2006;28(4):325-331.
13. Stijacic T, Schroth RJ, Lawrence HP. Are Manitoba dentists aware of the recommendation for a first visit to the dentist by age 1 year?. *J Can Dent Assoc*. 2008;74(10):903.
14. Szatko F, Wierzbicka M, Dybizbanska E, Struzycka I, Iwanicka-Frankowska E. Oral health of Polish three-year-olds and mothers' oral health-related knowledge. *Community Dent Health*. 2004;21(2):175-180.
15. American Academy of Pediatric Dentistry. Policy on the dental home. The Reference Manual of Pediatric Dentistry. Chicago, Ill.: American Academy of Pediatric Dentistry; 2021:43-4.
16. National Maternal and Child Oral Health Resource Center. The Dental Home: Summary from an MCHB Expert Meeting. September 18-19, 2008, Washington, DC. [www.mchoralhealth.org/PDFs/DentalHome\\_Report.pdf](http://www.mchoralhealth.org/PDFs/DentalHome_Report.pdf)
17. Mertz E, O'Neil E. The growing challenge of providing oral health care services to all Americans. *Health Aff (Millwood)*. 2002;21(5):65-77.

18. Coe JM, Razdan S, Best AM, Brickhouse TH. Pediatric dentists' perspective of general dentists' role in treating children aged 0-3 years. *Gen Dent.* 2017;65(2):e1-e6.
19. Schroth RJ, Boparai G, Boparai M, Zhang L, Svitlica M, Jacob L, et al. Tracking early visits to the dentist: a look at the first 3 years of the Manitoba Dental Association's Free First Visit program. *J Can Dent Assoc.* 2015;81:f8.
20. Schroth RJ, Ndayisenga S, Guenther K, Marchessault G, Prowse S, Hai-Santiago K, et al. Parents' and caregivers' perspectives on the Manitoba Dental Association's Free First Visit program. *J Public Health Dent.* 2016;76(3):206-212.
21. Hammersmith KJ, Siegal MD, Casamassimo PS, Amini H. Ohio dentists' awareness and incorporation of the dental home concept. *J Am Dent Assoc.* 2013;144(6):645-653.
22. Sanguida A, Vinothini V, Prathima GS, Santhadevy A, Premlal K, Kavitha M. Age and Reasons for First Dental Visit and Knowledge and Attitude of Parents Toward Dental Procedures for Puducherry Children Aged 0-9 years. *J Pharm Bioallied Sci.* 2019;11(Suppl 2):S413-S419.
23. Mileva SP, Kondeva VK. Age at and reasons for the first dental visit. *Folia Med* 2010;52:56-61.
24. Prakash P, Lawrence HP, Harvey BJ, Mclsaac 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):151-157.
25. Garg S, Rubin T, Jasek J, Weinstein J, Helburn L, Kaye K. How willing are dentists to treat young children?: a survey of dentists affiliated with Medicaid managed care in New York City, 2010. *J Am Dent Assoc.* 2013;144(4):416-425.
26. Muthu MS, Farzan JM, Prathibha KM. A new and simple infant assessment table. *Indian J Dent Res.* 2013;24(4):515-517.
27. Ananaba N, Malcheff S, Briskie D, Inglehart MR. Infant oral health examinations: attitudes and professional behavior of general and pediatric dentists in Michigan and pediatric dentists in the U.S. *J Mich Dent Assoc.* 2010;92(12):38-43.
28. Malcheff S, Pink TC, Sohn W, Inglehart MR, Briskie D. Infant oral health examinations: pediatric dentists' professional behavior and attitudes. *Pediatr Dent.* 2009;31(3):202-209.
29. Damiano PC, Brown ER, Johnson JD, Scheetz JP. Factors affecting dentist participation in a state Medicaid program. *J Dent Educ.* 1990;54(11):638-643.

**Corresponding author:**

Ralitsa Bogovska-Gigova

Department of Pediatric Dentistry, Faculty of dental medicine, Medical University Sofia, 1, Georgi Sofiisky str., Sofia, Bulgaria.

E-mail: r.bogovska@fdm.mu-sofia.com