

# Behavior of Lebanese Pediatricians regarding Children's Oral Health

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## ABSTRACT

**Aim:** The aim of the study is to evaluate the behavior of Lebanese pediatricians regarding children's oral health.

**Materials and methods:** A cross sectional study including 100 Lebanese pediatricians was performed. They answered 11 questions. Three variables were taken into consideration: The number of years in practice, the place and the type of practice.

**Results:** The answers were tabulated according to the latter three subdivisions. 97.7% of pediatricians who have been practicing for more than 5 years reported inquiring about whether a child is taking a milk/juice bottle overnight as compared to 76.9% of pediatricians who have been practicing for less than five years. The majority of pediatricians working in cities/big villages (98.9%) and 76.9% in small villages do look for cavities during oral examination.

**Discussion:** Independently of the years in practice, the majority of pediatricians look for cavities and check the mucosa/tongue during the oral examination. The results regarding dental examination revealed a significant difference between the pediatricians working in cities/big villages (98.9%) and those in small villages (76.9%). Regarding the frequent diagnosis of ECC, there is also a significant difference between pediatricians working in cities/ big villages (74.7%) and those working in small villages (46.2%).

**Conclusion:** The behavior of the Lebanese pediatricians regarding children's oral health is not satisfactory. In their daily practice, pediatricians need to have more interaction with pediatric dentists and should take into consideration the AAP and AAPD recommendations.

**Keywords:** Behavior, Children, Medical visit, Oral health, Pediatricians, Teeth.

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## INTRODUCTION

Oral health is an integral aspect of the general health that can influence both quality-of-life and mortality of individuals.<sup>1</sup> Dental caries is one of the most prevalent oral conditions, wherein, according to the World Oral Health Report, around 60 to 90% of school-aged children are affected by the condition in developed countries.<sup>2</sup> The global increase in dental caries prevalence is found affecting children as well as adults and primary as well as permanent teeth. This increase in dental caries signals a pending public health crisis.<sup>3</sup>

According to the American Academy of Pediatric Dentistry,<sup>4</sup> a delay in initiating dental hygiene practices by parents until after the eruption of several teeth, overnight bottle/breastfeeding, high intake of sweetened beverages or carbohydrates, delaying the first dental visit until after the first year of age, and delaying oral hygiene practices are all factors that have been attributed to the increased risk of early childhood caries (ECCs).

A study conducted in the United States by Caspary et al,<sup>5</sup> on residents in the Department of Pediatrics showed that most of them consider oral health screening as one of their responsibilities. Furthermore, in a study conducted in Turkey, the majority of pediatricians were more likely to believe that check-up visits should include oral health assessments.<sup>6</sup> A study conducted on Canadian family doctors and pediatricians revealed that majority of both groups believe that their practice plays a significant role in the children's oral health.<sup>7</sup>

Inadequate knowledge has been observed in several domains, such as recommending of the use of fluoride toothpastes for the prevention of dental caries.<sup>8,9</sup>

Furthermore, there has been a discrepancy between the latter positive reported attitude of pediatricians toward oral health assessment and their actual practices. According to Lewis et al,<sup>10</sup> more than 90% of the pediatricians said that they should examine their patients' teeth and educate families about preventive oral health. However, only 54% of pediatricians reported examining the teeth of more than half of their 0- to 3-year-old patients.<sup>6</sup> Although many pediatricians reported inspecting the oral cavity of children,<sup>7,8,10,11</sup> fewer pediatricians were likely to inquire about bottle feeding during night,<sup>6</sup> educate parents about significance of tooth brushing, and recommend the first dental visit to be done before 1 year of age.<sup>11,12</sup>

Knowledge deficiency and improper practice have been attributed to the lack of education and training in oral health assessments during both medical school education and residency training.<sup>13</sup> Several studies showed that pediatricians have reported that they did not receive adequate information during their medical formation.<sup>5,6,10,11</sup>

Pediatricians are not only the first health providers, but they also play an important role in the early identification and prevention of oral health problems.

This specific role can be either positive if the pediatricians are applying their dental knowledge in their practice, or negative if they do not provide the parents with all the necessary recommendations and advice.

For the first time in Lebanon, a study was conducted to assess the behavior of Lebanese pediatricians toward children's oral health issues, in their daily practice.

The aim of this study is to evaluate their behavior regarding children's oral health. In addition to the above-mentioned purpose, the second objective of this study is to assess whether the pediatricians' behaviors differed in terms of their years of experience (more than or less than 5 years), place of practice (city/big village vs small village), and type of practice (private with or without academic affiliation defined by teaching in local universities), by answering a questionnaire inspired from similar studies,<sup>8,12</sup> adapted to the context, pretested, and modified accordingly.

## MATERIALS AND METHODS

A cross-sectional approach was utilized to conduct this study. Our population of interest was Lebanese pediatrician members of the Lebanese Society of Pediatricians. They were selected from five governorates, namely, Beirut, Mount Lebanon, North Lebanon, South Lebanon, and Bekaa. The number of doctors from each governorate was proportional to the total number of pediatricians practicing in this governorate. A total of 100 pediatricians were interviewed at their workplaces: 22 from Beirut, 43 from Mount Lebanon, 11 from North Lebanon, 15 from South Lebanon, and 8 from Bekaa.

The survey was composed of 11 questions divided into two sections: general information and behavior regarding oral health. The general information included the following variables: the years of practice, which is divided into less than and more than 5 years, the place of practice, which is divided into city/big village and small village and, finally, the type of practice, which is divided into either private practice or having an academic affiliation. Pediatricians' behavior was measured using the following variables: age at which they recommend to stop overnight bottle/breastfeeding, the referral age

for the first dental visit, the recommended age to start teeth cleaning, and the amount of fluorinated toothpaste they recommend. Looking for dental caries and oral lesions as well as overnight intake of milk or juice and diagnosis of ECC were also measured as variables. All questionnaires were completely filled, with no answers were missing.

Data were analyzed using Statistical Package for the Social Sciences version 18. Categorical data were analyzed using chi-squared test, whereas continuous variables were analyzed using t-test.

## RESULTS

A total of 100 Lebanese pediatricians returned the questionnaire duly completed. The answers were tabulated according to three independent variables: years in practice, type of practice, and practice area.

About 87% of pediatricians had more than 5 years of experience and 13% had less than 5 years; 87% worked in cities/big villages and 13% in small villages. In relation to the type of practice, 63% of pediatricians practiced exclusively in the private sector and 37% had a private practice and an academic affiliation (Table 1).

The results were analyzed and discussed in Tables 2 to 4.

## DISCUSSION

Recognition of the profound deleterious effects of oral problems on children's quality-of-life has led to a growing interest in the role of pediatricians in early diagnosis in oral pathology.

This current study was conducted on a sample volume of 100 Lebanese pediatricians representing proportionally the five governorates. About 87% have been practicing since more than 5 years and they are basically considered well experienced. The remaining 13% have less than 5 years of practice. Only 37% of them have a private practice with an academic affiliation and possessing scientific and medical updates.

The majority of pediatricians work in cities or big villages (87%). This fact can be attributed to the presence of a highly dense population in the cities, which can lead to

**Table 1:** General information

<i>Parameters</i>	<i>Percentage of pediatricians (%)</i>
Years of practice: More than 5 years	87
Less than 5 years	13
Practice area: City/big village	87
Small village	13
Type of practice: Private practice only	63
With academic affiliation	37

**Table 2:** Pediatricians' behavior characteristics by years of practice

Questions		Years in practice		p-value
		More than 5 years	Less than 5 years	
Do you look for cavities during oral examination	Yes	97.7%	84.6%	0.081
Do you examine a child's mucosa/tongue	Yes	98.9%	100.0%	0.870
Do you inquire whether a child is taking milk/juice from a bottle overnight	Yes	97.7%	76.9%	0.015
How often do you diagnose ECC	Frequently	75.9%	38.5%	0.002
	Rarely/never	24.1%	61.6%	
At what age do you recommend to stop overnight feeding	Before 9 months	51.7%	7.7%	0.001
	Before 18 months	40.2%	53.8%	
	After 18 months	8.0%	38.5%	
At what age do you recommend to start teeth cleaning	1st tooth	51.7%	46.2%	0.469
	Several teeth	48.3%	53.8%	
At what age do you refer the child for a first dental visit	1 year	10.3%	15.4%	0.074
	3 years old	83.9%	61.5%	
	5 years old	5.7%	23.1%	
What amount of fluorinated toothpaste do you recommend	None	9.2%	30.8%	0.005
	Pea size	39.1%	61.5%	
	Along the length of the toothbrush	51.7%	7.7%	

**Table 3:** Pediatricians' behavior characteristics by practice area

Questions		Practice area		p-value
		City/big village	Small village	
Do you look for cavities during oral examination	Yes	98.9%	76.9%	0.007
Do you examine a child's mucosa/tongue	Yes	98.9%	100.0%	0.870
Do you inquire whether a child is taking milk/juice from a bottle overnight	Yes	97.7%	76.9%	0.015
How often do you diagnose ECC	Frequently	74.7%	46.2%	0
	Rarely/never	25.3%	53.9%	
At what age do you recommend to stop overnight feeding	Before 9 months	51.7%	7.7%	0.005
	Before 18 months	39.1%	61.5%	
	After 18 months	9.2%	30.8%	
At what age do you recommend to start teeth cleaning	1st tooth	54.0%	30.8%	0.102
	Several teeth	46.0%	69.2%	
At what age do you refer the child for a first dental visit	1 year	11.5%	7.7%	0.005
	3 years old	83.9%	61.5%	
	5 years old	4.6%	30.8%	
What amount of fluorinated toothpaste do you recommend	None	13.5%	0%	0.016
	Pea size	37.1%	81.8%	
	Along the length of the toothbrush	49.4%	18.2%	

**Table 4:** Pediatricians' behavior characteristics by type of practice

Questions		Practice area		p-value
		Private practice	Academic affiliation	
Do you look for cavities during oral examination	Yes	95.5%	100.0%	0.623
Do you examine a child's mucosa/tongue	Yes	100.0%	90.9%	0.110
Do you inquire whether a child is taking milk/juice from a bottle overnight	Yes	96.6%	81.8%	0.092
How often do you diagnose ECC	Frequently	70.8%	72.7%	0.825
	Rarely/never	29.2%	27.3%	
At what age do you recommend to stop overnight feeding	Before 9 months	49.4%	18.2%	0.016
	Before 18 months	37.1%	81.8%	
	After 18 months	13.5%	0%	
At what age do you recommend to start teeth cleaning	1st tooth	52.8%	36.4%	0.240
	Several teeth	47.2%	63.6%	
At what age do you refer the child for a first dental visit	1 year	11.2%	9.1%	0.970
	3 years old	80.9%	81.8%	
	5 years old	7.9%	9.1%	
What amount of fluorinated toothpaste do you recommend	None	8%	38.5%	0.001
	Pea size	40.2%	53.8%	
	Along the length of the toothbrush	51.7%	0.001%	

higher number of patients compared with small villages. This was noticed too by Probst et al<sup>14</sup> and Rosenthal et al.<sup>15</sup>

The results showed that, independently of the years in practice, the majority of pediatricians look for cavities and check the mucosa/tongue during the oral examination. It indicates their concern about the oral cavity as well as the general child's health (Table 2).

On the contrary, the results regarding dental examination revealed a significant difference between the pediatricians working in cities/big villages and those working in small villages (Table 3).

Interestingly, in small villages, 100% of pediatricians check the oral soft tissues; however, only 76.9% of them look for cavities. This can reveal that the pediatricians do not have a relatively high degree of knowledge regarding oral health, explaining their self-reported behavior.

Other studies showed more consistent results between the number of physicians looking for both cavities and performing an oral exam.<sup>8,16</sup> In 2007, Sandalli et al<sup>6</sup> showed that 38% of pediatricians frequently examine children's teeth for dental problems.

Regarding the overnight intake of milk/juice from a bottle, there were several significant differences found between the responses of more experienced pediatricians and the less experienced ones (Table 2) and between pediatricians working in cities/big villages and those in small villages (Table 3). According to Sandalli et al,<sup>6</sup> 22.3% of pediatricians question whether the child sleeps with a baby bottle.

The assessment of the behavior of pediatricians regarding the diagnosis of ECC frequently showed that 75.9% of pediatricians with more than 5 years of experience and 38.5% with less than 5 years were able to diagnose ECC (Table 2). Similarly, we noticed a significant difference between the pediatricians working in cities/big villages at 74.7% and 46.2% as working in small villages ( $p < 0.000$ ) (Table 3). Kagihara et al<sup>17</sup> mentioned that dental caries is the most common chronic disease of childhood, occurring 5 times as frequently as asthma and seven times more commonly than hay fever. This is the reason the authors insist on the significant role of a primary care health provider in the prevention of ECC. Krol<sup>18</sup> said that, optimally, a physician sees a child 8 times in the first year and around 12 times by age of 3. These regular visits would allow for early assessment of the child's oral health and referral for dental problems and prevention.

The principal factor implicated in ECC is the overnight intake of milk/juice. Independently of the number of years in practice, the practice area, and the type of practice, the results of the present study showed that most of pediatricians do not apply the American Academy of Pediatrics (AAP) and the American Academy of Pediatric

Dentistry (AAPD) recommendations about weaning the child before the age of 9 months.<sup>4,19</sup>

The highest percentages of right answers was 51% by pediatricians working for more than 5 years (Table 2), and by those working in cities/big villages (Table 3). However, only 18.2% of pediatricians with an academic affiliation were able to answer correctly (Table 4). About 91.6% of the respondents knew that putting a baby in bed with a bottle of milk/juice is harmful. However, for Retna Kumari et al,<sup>20</sup> the percentage was 63.5% and 72.6% for Shivaprakash et al.<sup>21</sup>

Pediatricians are able to educate parents about basic preventive dental care and counsel them long before dentists. They see the child 8 times in the first year and around 12 times by age of 3.<sup>18</sup>

In the present study, the highest percentage of pediatricians who recommend cleaning the first erupted tooth was 54% (Table 3). But, many problems in the oral cavity that are common in childhood can be prevented with the pediatrician's guidance.<sup>22</sup>

Concerning the first dental visit, the highest percentage of right answers is 15.4, 11.5, and 11.2% respectively, presented in Tables 2 to 4. Those dramatic results show that the majority of the Lebanese pediatricians are not following the new AAP and AAPD guidelines. The first examination is recommended at the time of the eruption of the first tooth and no later than 2 months of age.<sup>23,24</sup>

The answers about the recommended amount of fluorinated toothpaste were equally divided between those who recommend "applying along the length of the bristles" and those who recommend a pea size or none. So, the Lebanese pediatrician's tendency is to use an excess amount of toothpaste. It reflects on their lack of knowledge and this could be due to the impact of commercials.

To minimize the risk of fluorosis in children, while maximizing the caries-prevention benefit for all age groups, the appropriate amount of fluoride toothpaste should be used by all children regardless of age.<sup>25</sup>

## CONCLUSION

This finding elicits the following concern: the behavior of the Lebanese pediatricians regarding children's oral health is not satisfactory. This fact leads to the following suggestions:

- Effective application of their dental knowledge is needed for good oral health.
- Collaboration between pediatric dentists and pediatricians is recommended not only through education programs, but also by promoting oral examinations of the child during his first year of life.

- Continuous updating on the AAPD and AAP guidelines is required.
- Applying the recommendations of the AAPD and AAP must become a routine in their daily practice.
- Informing parents about the importance of child's oral hygiene should be adhered to in every child's general consultation.

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