

Conduct of pediatricians in relation to the oral health of children

Conduta de pediatras em relação à saúde bucal de crianças

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Resumo

Objetivo: Os médicos pediatras são os profissionais de saúde que acompanham a criança ao longo dos primeiros anos de vida. O objetivo deste estudo foi avaliar condutas adotadas por pediatras em relação à saúde bucal de crianças. **Método:** Trata-se de um estudo observacional transversal descritivo, com amostra constituída por 100 médicos especialistas em pediatria, atuantes em serviços público e privado. Foi utilizado questionário como instrumento de coleta de dados e os pediatras foram abordados em seus locais de trabalho. **Resultado:** A maioria dos pediatras (69%) pertence ao gênero feminino, com idade média de 48 anos, trabalham simultaneamente nos serviços de saúde público e privado, com mais de 20 anos de experiência profissional. Com relação ao nível de conhecimento em relação à saúde bucal, 59% consideraram como bom e 59% afirmaram não ter sido abordado o tema sobre saúde bucal durante a formação em pediatria. Noventa e dois por cento realizam exame da cavidade bucal do bebê como procedimento de rotina; 64% recomendam o uso de dentífrico fluoretado; 66,7% encaminham os pacientes à consulta odontológica no primeiro ano de vida. Com relação à amamentação noturna, 55,6% não fazem associação entre aleitamento materno e a instalação de cárie precoce na infância. Além disso, 74,7% não justificam associações entre irrompimento dos primeiros dentes decíduos e manifestações sistêmicas e 93% contraindicam uso de chupetas. **Conclusão:** Conclui-se que os pediatras apresentam atitudes pró-ativas em relação à saúde bucal, apesar de necessitarem de maiores esclarecimentos quanto à importância dos fluoretos no controle da cárie dentária.

Descritores: Saúde bucal; cárie dentária; fluoretos; pediatria.

Abstract

Objective: Pediatricians are health professionals who treat the child during the first years of their life. The purpose of this study was to evaluate the conduct adopted by pediatricians regarding the oral health of children. **Method:** This was a descriptive cross-sectional observational study with a sample of 100 physicians specialized in pediatrics, working in the public and private sectors. A questionnaire was used for data collection, and the pediatricians were approached in their workplaces. **Result:** Most pediatricians (69%) belong to the female gender, with an average age of 48 years, and work in both the public and private sectors of health and have over 20 years of professional experience. Regarding their level of knowledge on oral health, 59% consider it to be good and 59% said that they had not been approached about this issue during their training in pediatrics. Ninety-two percent routinely examine the oral cavity of the baby; 64% recommend the use of fluoridated toothpaste, and 66.7% direct patients to a dental appointment in the first year of life. Regarding breastfeeding at night, 55.6% do not make the association between breastfeeding and the onset of early childhood caries. Furthermore, 74.7% do not justify the associations between the eruption of the first primary teeth and systemic manifestations, and 93% contraindicate the use of a dummy. **Conclusion:** It was concluded that pediatricians have proactive attitudes with regards to oral health. However, they need more information on the importance of fluoride for the control of dental caries.

Descriptors: Oral health; tooth caries; fluoride; pediatrics.

INTRODUCTION

The most common oral diseases - dental caries, gingival changes and malocclusions - still affect most children¹. Such diseases can be prevented and/or controlled by fundamental measures related to health education by the household. It is important that the family adopt these measures, especially the

mother, who tends to be the primary caregiver of the children; these measures include routine oral hygiene, diet control and preventing non-nutritious habits. In this context, it would be appropriate to have oral health education developed by the parents or guardians with the guidance of health professionals.

The evidence in the literature reveals that when the frequency of visits to the pediatrician and pediatric dentist are analyzed, regardless of the nature of the service being sought (public or private), the parents systematically consult pediatricians throughout the first year of life, which does not occur in relation to dental queries^{2,3}.

The National Survey of Households of 2003, which evaluated the use of dental services in Brazil and the differences in the proportions of use of these services between the population groups, found that 81.9% of children aged zero to four years had never visited the dentist, which decreased to 36.8% of children aged five to nine years⁴. The National Survey of Households of 2008 showed that the proportion of individuals aged zero to six years who never sought dental care still remained high at 66.7%⁵.

Pediatricians are health professionals who supervise the processes of growth and development of children from birth and must be able to educate parents about basic preventive dental care, early diagnosis of pathological changes in the oral cavity and appropriate referrals for the children⁶⁻⁸.

The present study is to evaluate the behaviors of pediatricians regarding their guidance related to the oral health of children.

METHODOLOGY

1. Subject

The study is an observational cross-sectional study. The population was composed of pediatricians enrolled in the Regional Council of Medicine (CRM-PI), Section Piauí and working in the city of Teresina (PI) who agreed to participate. According to the CRM-PI (personal communication), 101 pediatricians practise in the state, which is divided into 13 municipalities. In the city of Teresina, there are 84 professionals developing their professional activities who are registered with the council.

The sample was recruited by census. Pediatricians were visited in their work environments (private practices, public and private hospitals and clinics) and invited to participate in the study.

The data collection instrument was a questionnaire containing demographic data and issues concerning the guidance given to parents and caregivers about oral health. The structure of the questionnaire was based on research literature and adapted to the objectives of the study^{6,7}. Pre-tests of the questionnaire were performed with ten pediatricians who did not participate in the study in order to make the necessary adjustments for an improved understanding of the subject. Pediatricians were handed two envelopes, one containing the questionnaire and the other containing the Terms of Consent, which were answered and sealed. This ensured absolute confidentiality regarding the information collected.

2. Ethical Considerations

The study was approved by the Ethics Committee of the Federal University of Piauí (UFPI) prior to its implementation (0121.0.045.000-10). It was given the resolution 196/96 of the National Health Council (CNS), which regulates guidelines and research standards involving humans.

3. Statistical Analysis

The data were entered into an Excel spreadsheet for further evaluation.

Nonparametric statistical analysis was performed using StatXact 3.1. The categorical variables were described by means of absolute (number) and relative (%) frequencies for quantitative variables. The reading of the results was performed using the statistical position (mean) and dispersion (standard deviation). To test the association between variables, we used the chi-square test for nonparametric data. The significance level was 95% with an alpha error (α) of 5%.

RESULT

With regard to the questionnaires, there was a considerable number of physicians working as pediatricians with their name missing from the list, which was provided by the Regional Council of Medicine. Thus, the final sample of the study consisted of pediatricians, residents completed, including registered and unregistered CRM-PI working in the city of Teresina - PI; a total of 130 pediatricians were included, 39 of which were recorded in the CRM-PI.

We excluded 15 pediatricians who performed sub-specialties within pediatrics, such as neurologists, pediatric cardiologists, and pediatric surgeons. Fifteen professionals refused to participate in the study, and the final sample consisted of 100 pediatricians, of which 39 were enrolled in the CRM-PI.

The results were shown in Tables 1 and 2.

In this study, 92% of the pediatricians always performed an oral examination of the children during routine consultations. Regarding the indication of cleaning the baby's mouth, 94% confirmed that they indicated the procedure. When asked how to guide the completion of cleaning, 59% indicated cleaning with water or saline applied with gauze, cotton or by ingestion using a water bottle after a milk bottle; 26% did not respond; and 15% used other materials such as sodium bicarbonate and water, toothpaste without fluoride, fluoride alone, a toothbrush, toothpaste, a toothbrush and water, finger cot, finger cot with toothpaste and baking soda with toothpaste without fluoride.

DISCUSSION

This is the first study conducted in the city of Teresina, Piauí State and also the first study on the conduct of pediatricians regarding the guidelines regarding oral health in children. The results of this study provide valuable data and perspectives for the development of continuing education programs in oral health for these professionals. For example, the approach of the technical staff towards the medical professionals who routinely refer children in their first year of life may be a strategy to raise the awareness of parents and caregivers seeking dental care for children at an early age.

The high rate of participation in the study (87%) can probably be attributed to the fact that the professionals were contacted interpersonally in their workplaces and not by correspondence or online searches.

Among the limitations of the study, the self-reported nature of the researched information may not actually represent the true clinical practices adopted by professionals. However, the results based on self-reported data are considered valid when anonymity is assured. This survey fulfilled this criterion.

As described in the literature, it was observed that pediatrics is predominantly practiced by women⁶⁻¹⁰. A majority of our sample included middle-aged professionals who worked in both the public and private sectors and had over 20 years of experience in pediatrics (Table 1).

The knowledge related to oral health that is conveyed by pediatricians to parents and guardians is usually derived from practical experience. There are a few professionals who were educated on oral health during the undergraduate courses in medicine, medical homes or formal education programs^{6,8,9,11-13} (Table 1).

The lack of interdisciplinary teams in public and/or private practice indicates that these teams would hinder their own enhancement and involvement in health education¹².

Inspecting the oral cavity of the baby should be done when examining the oropharynx and nasopharynx; it is necessary for the diagnosis of the pathologies affecting children, particularly oral diseases⁹. Although the academies of dentistry have established recommendations regarding oral hygiene in babies, specific recommendations have not yet made by pediatricians. Infantile oral hygiene should begin before the eruption of the first teeth with a cotton diaper or gauze moistened with filtered water; this is a procedure that allows for the physical cleaning of the oral cavity and familiarizing the mother and baby with the motions¹⁴.

After the first teeth erupt, oral hygiene should incorporate the use of fluoridated toothpaste. The fluoride concentration should be equal to or greater than 1,000 ppm¹⁵ and be similar to the amount of a grain of rice ("smear"¹⁶) for children under two years and a pea for children between two and five years^{14,15}. This will help prevent and control the progression of dental caries. The use of fluoride dentifrices is associated with the disorganization of the dental biofilm buildup, which is necessary for the development of diseases such as dental caries¹⁶⁻¹⁸.

Toothpastes with no or reduced concentrations of fluoride have become widespread and have included labels stating that they should be used by children under six years of age. Both the lay population and a significant portion of pediatricians have indiscriminately adopted these recommendations without any scientific evidence (Table 2). A systematic review of the literature associated with meta-analyses concluded that conventional fluoride toothpastes (fluoride concentration exceeding 1,000 ppm fluoride) are effective in reducing dental caries in the primary dentition and should be recommended for preschoolers¹⁹.

The control of dental caries with fluoride should be cautioned with the risk of inducing fluorosis¹³, which is a result of exposure in tooth germ formation (the risk period is between 1.5 and 5 years old); the fluoride ion is ingested and metabolized during the tooth formation. Changes then occur in the enamel mineralization that are directly associated with the amount ingested, time of exposure, and age, weight and nutritional status of the child²⁰.

In order to reduce the risk of developing dental fluorosis in children of preschool age, we researched toothpastes with low fluoride concentrations (500 ppm fluoride) and found no scientific evidence that low fluoride toothpastes have the same efficacy as conventional toothpastes (1,000-1,100 ppm fluoride) in combating dental caries. A significant reduction in the effectiveness of these products in the prevention of dental caries was observed mainly in pediatric dental caries^{15,21}.

The child's first visit to the dentist should be around six months of age, an age when parents should be educated on preventing the onset of oral diseases such as dental caries and periodontal diseases. The American Academy of Pediatric Dentistry and the Brazilian Association of Pediatric Dentistry recommend that a child's first visit to the dentist should occur within the first 12 months^{15,22,23}; this recommendation is not followed by most pediatricians^{6,22} (Table 2).

A visit to the pediatrician is routinely done in the first year of life with objective evaluation of the child's growth and development and encouraging vaccinations. The search for dental care tends to occur later and usually occurs when parents perceive the presence of some type of alteration^{2,3}. The public dental care for children under three years of age is very scarce, and most of the projects are linked to universities¹⁴. Just as general early childhood medical care is performed by public healthcare staff, so should dental care be encouraged and administered simultaneously.

Table 1. Characteristics of pediatricians working in Teresina - PI, Teresina, 2012

Characteristic	N	%
Gender		
Male	31	31
Female	69	69
Type of activity/link		
Public	25	25
Private	18	18
Public and Private	57	57
Exercise time in pediatrics		
0 to 9 years	20	20
10 to 19 years	26	26
20 years or more	53	53
No response	1	1
Self-assessment of oral health knowledge		
Good	59	59
Regular	37	37
No response	4	4
Approach to oral health content in residence		
Yes	41	41
No	59	59

Table 2. Conduct of pediatricians regarding oral health according to the time of exercise in pediatrics. Teresina, 2012

Do you suggest the use of fluoridated toothpaste?				
Experience in pediatrics	No	Yes	No Response	TOTAL
0 to 9 years	6 (30%)	14 (70%)	0 (0%)	20 (20,2%)
10 to 19 years	8 (30,8%)	17 (65,4%)	1 (3,8%)	26 (26,3%)
20 years or more	19 (35,8%)	32 (60,4%)	2 (3,8%)	53 (53,5%)
TOTAL	33 (33,4%)	63 (63,6%)	3 (3%)	99 (100%)
$\chi^2 = 0,42$ p= 0,8107				
At what age do you indicate the use of fluoridated toothpaste?				
Experience in pediatrics	To 1 year	After 1 year	No Response	TOTAL
0 to 9 years	2 (14,3%)	10 (71,4%)	2 (14,3%)	14 (22,2%)
10 to 19 years	3 (17,6%)	9 (53%)	5 (29,4%)	17 (27%)
20 years or more	12 (37,6%)	18 (56,2%)	2 (6,2%)	32 (50,8%)
TOTAL	17(27%)	37 (58,7%)	9 (14,3%)	63 (100%)
$\chi^2 = 2,464$ p = 0,2917				
Do you suggest sending the baby to the dentist?				
Experience in pediatrics	No	Yes	No Response	TOTAL
0 to 9 years	2 (10%)	18 (90%)	0 (0%)	20 (20,2%)
10 to 19 years	3 (11,5%)	22 (84,6%)	1 (3,9%)	26 (26,3%)
20 years or more	2 (3,8%)	50 (94,3%)	1 (1,9%)	53 (53,5%)
TOTAL	7 (7%)	90 (91%)	2 (2%)	99 (100%)
$\chi^2 = 1,968$ p = 0,3788				
At what age do you suggest sending the baby to the dentist?				
Experience in pediatrics	To 1 year	After 1 year	No Response	TOTAL
0 to 9 years	12 (66,7%)	2 (11,1%)	4 (22,2%)	18 (20%)
10 to 19 years	15 (68,2%)	1 (4,5%)	6 (27,3%)	22 (24,4%)
20 years or more	33 (66%)	8 (16%)	9 (18%)	50 (55,6%)
TOTAL	60 (66,7%)	11 (12,2%)	19 (21,1%)	90 (100%)
$\chi^2 = 1,565$ p = 0,4571				
Do you associate the eruption of primary teeth with systemic manifestations (fever, diarrhea, etc.)?				
Experience in pediatrics	No	Yes	No Response	TOTAL
0 to 9 years	11 (55%)	9 (45%)	-	20 (20,2%)
10 to 19 years	19 (73%)	7 (27%)	-	26 (26,3%)
20 years or more	44 (83%)	9 (17%)	-	53 (%53,5)
TOTAL	74 (74,7%)	25 (25,3%)	-	99 (100%)
$\chi^2 = 6,091$ p = 0,0476				
Do you contraindicate pacifier use?				
Experience in pediatrics	No	Yes	No Response	TOTAL
0 to 9 years	2 (10%)	18 (90%)	-	20 (20,2%)
10 to 19 years	1 (3,8%)	25 (96,2%)	-	26 (26,3%)
20 years or more	4 (7,5%)	49 (92,5%)	-	53 (%53,5)
TOTAL	7 (7%)	92 (93%)	-	99 (100%)
$\chi^2 = 0,6909$ p = 0,7079				

Table 2. Continued...

Do you have any recommendation for breastfeeding at night?			
Experience in pediatrics	No	Yes	TOTAL
0 to 9 years	6 (30%)	14 (70%)	20 (20,2%)
10 to 19 years	8 (30,8%)	18 (69,2%)	26 (26,3%)
20 years or more	13 (24,5%)	40 (75,5%)	53 (53,5%)
TOTAL	27 (27,3%)	72 (72,7%)	99 (100%)
$\chi^2 = 0,4365$ $p = 0,8039$			
Do you believe that breastfeeding may be associated with early childhood caries?			
Experience in pediatrics	No	Yes	TOTAL
0 to 9 years	11 (55%)	9 (45%)	20 (20,2%)
10 to 19 years	15 (47,7%)	11 (42,3%)	26 (26,3%)
20 years or more	29 (54,7%)	24 (45,3%)	53 (53,5%)
TOTAL	55 (55,6%)	44 (44,4%)	99 (100%)
$\chi^2 = 0,06567$ $p = 0,9677$			

The process of tooth eruption is physiological and cannot be considered as a primary etiological factor of systemic manifestations, but can be enhanced if it is associated with child anxiety, a fact that is corroborated by the surveyed pediatricians (Table 2). Irritability, increased salivation, runny nose, loss of appetite, diarrhea, rash and sleep were associated with the eruption of the primary teeth. However, the occurrence of severe signs and symptoms such as fever cannot be attributed to teeth^{24,25}. The length of medical experience did not influence the conduct of the pediatricians (Table 2).

As for breastfeeding, its importance in the child's quality of life and health is well documented. The World Health Organisation recommends that breastfeeding should be exclusively utilized until at least six months of age; this lowers the prevalence of developing non-nutritive sucking habits (pacifier sucking, digital, nail biting, etc.)^{26,27}.

The establishment and persistence of non-nutritive oral habits can have consequences. This affects the development of the stomatognathic system, influences the oral motor skills such as chewing, speaking and swallowing and favors the installation of occlusal changes, which affects the quality of life of children and their immediate family. This was demonstrated by the sample surveyed (Table 2) and confirmed by the literature^{10,26}. However, the American Academy of Pediatrics (AAP) recommends pacifier use during sleep to reduce the risk of sudden infant death syndrome (SIDS)^{28,29}. The Brazilian Association of Pediatric Dentistry recommends that the age of three years is the time limit for pacifier use in and that it is ideal to gradually remove this habit

until the age of two years; there is the possibility of self-correcting the possible disharmony in the dental arches as a result of this²³.

The American Association of Pediatrics²⁸ recommends breastfeeding for nine months. The American Academy of Pediatric Dentistry recommends the suspension of breastfeeding at night when the first teeth begin to erupt¹⁶. Breastfeeding for more than a year of life is not a risk factor for early childhood caries (ECC) if it is done once or twice a day³⁰. However, prolonged contact with human milk teeth results in acidogenic conditions, which leads to demineralization and the dissolution of enamel^{14,27,30}. The majority (73%) of pediatricians educate parents or guardians regarding nighttime breastfeeding. However, when questioned on the existence of an association between breastfeeding and early childhood caries, the majority (55.6%) do not believe in this association.

The present study demonstrated that pediatricians have a relatively high degree of knowledge regarding oral health, given their self-reported behavior. However, discrepancies between knowledge and attitudes were observed, which indicates the need for interdisciplinary academic backgrounds that include oral health at different life cycles and ongoing education regarding integrated approaches to health care.

In general, the surveyed pediatricians have the appropriate attitudes towards oral health but need more evidence-supported information on the use of fluorides for children after the first teeth erupt. Moreover, it is necessary to stimulate the formation of interdisciplinary teams that will provide medical assistance for children, allow for better monitoring of their growth and development and promote holistic health.

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CONFLICTS OF INTERESTS

The authors declare no conflicts of interest.

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