

Evaluation of Dental Caries Behavior in Childhood: Health Promotion and Control

Avaliação do Comportamento da Cárie Dentária na Infância: Controle e Promoção de Saúde

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Abstract

Dental caries is still the most common pathology in childhood, caused mainly by lack of adequate prevention. The aim of this project was to evaluate the dental caries profile in children and the importance of multidisciplinary practice in dental caries. Material and methods: 1st stage- meetings were held with the teachers of the child education network and conferences addressed to parents and those responsible for the children. 2nd stage- Assessment and examination of oral health with education process and motivation for dental hygiene. Results: A total of 3390 children were analyzed, of which 859 had carious teeth, that is, 25.34% of the children had caries disease. There is a large presence of caries in the PRE II level, whose highest prevalence of caries is 41.73%, and the lowest recorded in Kindergarten I with 3.11%. This is mainly due to age, directly related to the period in which the basic oral health care program began in day care centers, as older children already had high caries rates when the preventive program was institutionalized to control the occurrences of caries and health promotion. Conclusion: The prevalence of caries in preschool children is still high, but the multidisciplinary approach has shown to be effective and able to reach the levels recommended by ONU 2030 appointment book for dental caries control.

Keywords: Dental Caries. Oral Health. Oral Hygiene.

Resumo

A cárie dentária é a enfermidade mais comum na infância, causada essencialmente pela falta de prevenção adequada. O objetivo deste estudo foi avaliar o perfil da cárie dentária em crianças e a importância da ação multidisciplinar no controle da mesma. Na primeira fase, foram realizadas reuniões com os professores da rede de educação infantil e conferências dirigidas aos pais e responsáveis das crianças. Na 2ª fase: avaliação e exame de saúde bucal com orientação e motivação para higiene bucal. Foram analisadas 3390 crianças, das quais 859 apresentaram cárie dentária (25,34%). Observou-se grande presença de cárie no nível PRE II, cuja maior prevalência de cárie é de 41,73%, e a menor registrada no Jardim I com 3,11%. Isso se deve principalmente à idade, relacionada diretamente ao período em que iniciou o Programa Básico de Atenção à Saúde Bucal nas creches, uma vez que as crianças mais velhas já apresentavam altas taxas de cárie quando o programa preventivo foi institucionalizado para controlar ocorrências de cárie e promoção da saúde bucal. Ainda existe alta prevalência de cárie em pré-escolares, entretanto, a abordagem multidisciplinar mostrou-se efetiva e capaz de alcançar os índices preconizados pela Agenda 2030 da ONU para o controle e prevenção da cárie dentária.

Palavras-chave: Cárie Dentária. Saúde Bucal. Higiene Bucal.

1 Introduction

Dental caries is a disease defined as a biofilm dependent sugar^{1,2}, and the most common oral disease in childhood.³ Early childhood caries (CTI) is identified as a peculiar type of caries that develops rapidly and affects the deciduous dentition, which can lead to pain, infection or early loss of the dental element, often causing poor nutrition and low self-esteem. In addition, some children may present growth deficiency, changes in occlusion and continuity of caries in the permanent dentition; There may even be complications related to fear and aversion to dental treatment.⁴

The etiology of early childhood caries is well studied, including the primary factors presence of cariogenic bacteria,

fermentable carbohydrates and susceptible host factors that influence their development, such as socioeconomic and demographic ones.⁵ However, when the pathology sets in, if not controlled, can reach severe stages, negatively affecting the child's life.

When the child is affected by dental caries, often its initial manifestations go unnoticed by the parents, in a way that the disease harms the child's health. The great misunderstanding of mothers about the ideal moment to take their children to the first consultation with the pediatric dentist, associated with the lack of knowledge that children caries at a very early age, aggravate the disease, and when manifested, will only be noticed if pain, discomfort or aesthetic problems occur.⁶

Sometimes, due to lack of care and/or knowledge of the mothers, caries activity becomes so acute that in a short time the destruction of a dentition occurs young, frightening parents and, sometimes, also dentists. The childhood caries is a disease of complex multifactorial nature that constitutes severe frame, which leads the mother to seek a dental service for her son mainly in the age between 0 and 36 months.⁶

Unfortunately, carious lesion on deciduous teeth is considered a fatality, since many mothers are unaware that this disease can be prevented.⁷ Not everyone has access to information on how to correctly sanitize their children's teeth.⁸ Pediatricians are the first health professionals to make contact with infants and their parents, however they have vague knowledge about oral health, fact which indicates that there should be a greater interaction between the Pediatric Medicine and Dentistry for infants.⁹ In addition, most parents take their children to the dentist at an age that does not allow the possibility of receiving early attention and the presence of caries lesions is the main reason for the consultation.¹⁰

Dental caries has mainly affected children from popular class families, and greater difficulty in accessing health education. There is a close relationship between the level of health and the socioeconomic cultural level.¹¹⁻¹³ Considering that, early childhood dentistry should prevent the caries onset and development. So, identifying the groups of most susceptible individuals to this disease is the first step towards its prevention.

The objective of this study was to establish the profile related to the children's oral health from public day care centers in the municipalities of Araçatuba region, in the state of São Paulo / Brazil, and to promote the importance and need in educators, their respective teams, mothers and the oral hygiene of babies and children, so that this habit becomes routine in the lives of these children and provides them with an adequate oral health. The project also aimed to develop a multidisciplinary approach among pedagogues, dentistry students and dentists to achieve a better performance in the dental caries prevention.

2 Material and Methods

This was a transverse study, approved by the Ethics Committee and Informed Consent Form. For the accomplishment of this research 44 public nurseries were visited in the cities of the region of Araçatuba, where the students under the direction of Professor Doctor Wilson Galhego Garcia, developed the project entitled "Oral Health in Childhood", which consisted of two phases: 1- Meetings with the teachers of the children's education network with lectures on the importance of dental caries prevention presented at the meetings of HTPC (teachers' weekly pedagogical plan), lectures were also held with parents and representatives at parent-teacher conferences. This step was fundamental for the development of the project, since that this interdisciplinary Project favored a better adaptation with

the activities and measures based on the disease prevention and control. The focus "working with mothers" rather than "for the mothers" approach proved to be the most successful method of arousing interest in the children's oral health. 2- To evaluate oral health: each child, from 0 to 6 years of age was examined by dentistry undergraduate students using a wooden tongue depressor under artificial light of the classroom, and recorded the presence of caries lesions detected in plain view. The children were grouped by classroom and each one when examined, was reported the presence of caries lesions, regardless of the affected surfaces.

After the clinical examination, all the children underwent a process of education and motivation for oral hygiene, through guidelines on tooth brushing and its execution, in the presence of their respective caregivers and/or teachers. In addition, folders were provided to each educator containing instructions for proper oral hygiene practice and guidance on oral health. Children who were detected with caries lesions were instructed and referred to the Faculty of Dentistry of Araçatuba- UNESP, for the treatment of the disease. In addition, meetings were held with parents or guardians to warn about the disease, and to institute a treatment and control of the risk factors, since that when in complex and joint action manifest the caries.

3 Results and Discussion

Table 1 – Percentage of caries in children examined according to the school series

School Grade	N°	Percentage
KINDERGARTEN I (n=482)		
With Dental Caries	15	3.11%
Without Dental caries	467	96.89%
KINDERGARTEN II (n=468)		
With Dental Caries	30	6.41%
Without Dental caries	438	93.59%
Maternal I (n=670)		
With Dental Caries	145	21.64%
Without Dental caries	525	78.36%
Maternal II (n=680)		
With Dental Caries	231	33.97%
Without Dental caries	449	66.03%
Pré I (n=570)		
With Dental Caries	216	37.89%
Without Dental caries	354	62.11%
Pre II (n=520)		
With Dental Caries	217	41.73%
Without Dental caries	303	58.27%
N= 3390		

Kindergarten I and II – children 0-2 years;

Maternal I and II- children 2- 4 years;

Pre I and II- children 4- 6 years;

Source: Research Data

A total of 3390 children, who were present in the day care centers on the day of the visit, were analyzed, of whom 859 had carious teeth, that is, 25.34% of the children had dental caries. The results showed a high prevalence of caries in the PRE II level, with a higher prevalence of caries being 41.73%, and the lowest recorded in Kindergarten I with 3.11%. This is mainly due to age, directly related to the period in which the basic oral health care program began in day care centers, since older children already had high caries levels when the preventive program was institutionalized to control caries occurrences and health promotion.

In the process, 300 educators and 3000 mothers were trained as oral health promoters. Consequently, all the children that were analyzed, except those who belonged to nursery school classes; however, they also received the same instructions and guidelines for hygiene and oral health.

Dental caries is a disease with a high prevalence worldwide, and is considered by the World Health Organization as a serious public health problem that affects people of all ages. The knowledge of the etiology and pathophysiology of dental caries allows us to understand the importance of early diagnosis of the disease. The importance of this is in the possibility of avoiding the cavitation of the lesions and, thus, to be able to control the caries more easily. The pediatrician can play a decisive role in the information, orientation and referral of patients with this disease.¹⁴

In developing countries, caries is still a major public health problem. Looking at the data found in this research, in a low-income population with 25.34% of children with caries, our results are consistent with those reported by Cardoso et al., Considering a polarized disease.¹⁵ This phenomenon of polarization characterizes a small portion of the population, especially the least favored ones, with a greater need for treatment.¹⁶ Communities with low socioeconomic status are often susceptible to a high prevalence of caries,¹⁷ since family income may affect the acquisition of nutrient rich foods, and consequently cause the caries development due to the poor intake of fruits and vegetables, as well as the delay in the inclusion of solid foods, making children be fed almost exclusively by bottle for a longer period of time than necessary.¹⁸

The presence of several infectious diseases, among them, dental caries, has changed in recent years. There is a marked reduction of caries in children in several industrialized countries, such as Sweden, Norway, Denmark, Finland, England and the United States of America. There was a considerable reduction in the number of teeth that presented caries and the number of children free from the disease increased significantly. There is evidence of a reduction in the disease, at a time when the consumption of fluoride increased considerably, however there are other factors that cannot be discarded, such as the possible modification of eating habits and the microbiota.¹⁹

Uncontrolled ingestion of carbohydrate-rich foods and

lack of oral hygiene is a risk factor for the development of childhood caries disease. An approach and caring for food is necessary, since caries is a sugar-dependent disease. In addition, we emphasize the critical importance of having a multidisciplinary team composed not only of health professionals, but also of education professionals such as teachers and others in the education sector.

The prevalence of caries in Brazil remains high when compared to that registered in other countries, despite all the efforts that are made to prevent dental caries in children, we must pay attention and assistance to the most disadvantaged social groups, since they have greater difficulty accessing health education.¹⁹

This high rate of caries registered in day care centers in the cities of the region of Araçatuba shows what was mentioned in the introduction: lack of education in oral health causes considerable indifference on the part of parents and day care educators, who often do not know that their children and students may have caries disease even when they are children, and it is this lack of information that often leads parents to seek dental care for their children only when they have pain and caries lesions already at an advanced stage.

Of the 19 cities visited and 44 schools analyzed, at least 1 child had cavitated lesions in the preschool classes. Of the cities surveyed, 10 of them presented classes with more than 50% of children with caries lesions and many schools with classes with 30-40% of children with caries lesions, still high values after many years of discovery of the etiological factors of the caries illness. This index shows the need for immediate intervention and greater attention to public policies aimed at this reality.

Despite the differences in dental caries in sixteen cities, the ones that made the most difference were schools of children from the same city, showing that it is not enough to only supply fluoridated water, but also to promote oral health actions and, especially, early childhood health education. The orientation and introduction of oral health education for parents, leaders and educators, along with the children, propose greater benefit and promote the oral health of these children, especially those aged 0 to 6 years old.

The babies' oral health depends on the quality and access of mothers and fathers to educational and preventive measures and the constant reinforcement in the construction of this knowledge. It also reflects the need for reorganization of public health programs, involving basic health care. We need to invest in education and the improvement of socio-economic conditions and stimulate collective solidarity and self-esteem, so that the level of health is improved.^{20,21}

During these four years of the project, it was possible to reach several cities where oral health education was precarious and so they want to continue with these preventive and educational actions to reach 2018 with a maximum of 10% of the children with cavitory carious lesions.

4 Conclusion

According to the methodology used and the results obtained, we conclude that:

1. Dental caries can affect any child from the eruption of the first deciduous teeth, and from the first months of life the control and proper care of oral health is essential.
2. There is a high prevalence of caries in infants and preschool children and low attendance of preventive programs.
3. Oral health should be viewed as primary health education by educators and parents / guardians.
4. With the multidisciplinary activity, it was notorious the greater effectiveness of preventive parameters in the control of dental caries, the most frequent disease in childhood.
5. Effective public policies are needed to achieve greater integration of early childhood education and health planning.
6. Effective oral health education and prevention programs should be carried out in kindergartens and schools, promoting the active participation of parents and caregivers, as well as a multidisciplinary team with mutual support with dentistry professionals.

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