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Original research

Prevalence and determinants of dental caries in a sample of schoolchildren of Sátão, Portugal



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ABSTRACT

Objectives: The aim of this study consisted in the assessment of the prevalence of dental caries, dmft and DMFT index among schoolchildren and analysis of the association between oral health behaviors and socio-demographic aspects.

Methods: In a cross-sectional study we assessed 605 children aged between 6 and 12 years from 27 public schools of Sátão, Portugal. Dental caries was assessed by performing an intra-oral observation. Data concerning children's oral health behaviors and socio-demographic variables were collected through a questionnaire filled out by their parents. Prevalences were expressed in proportions. The continuous variables were described using the mean and standard deviation. The Chi-square test was used to compare proportions and the Kruskal-Wallis test for comparing continuous variables.

Results: We verified that the dmft index was 3.01 ± 3.03 and DMFT index was 0.93 ± 1.35 . The prevalence of dental caries is associated with age (≤ 8 years, 37.1% vs 40.0%, $p = 0.008$), parents' educational level (0–4 years, 4–9 years, >9 years, 41.2% vs 43.7% vs 13.8%, $p = 0.001$) and residence area (rural, 42, 2% vs. 31.2%, $p = 0.003$). Dental caries is also associated with oral health behaviors such as toothbrushing (twice or more times per day, 31.2% vs 42.2%, $p = 0.003$), dental flossing (34.5% vs 42.3%, $p = 0.036$) and frequent dental appointments (34.5% vs 41.2%, $p = 0.04$).

Conclusions: We found a moderate prevalence of dental caries and in early age children there is a high percentage with multiple dental caries. Dental caries is associated with socio-demographic and behavioral aspects.

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Prevalência e determinantes da cárie dentária numa amostra de crianças escolarizadas do concelho de Sátão, Portugal

R E S U M O

Palavras-chave:

Cárie dentária
Saúde oral
Escovagem
Higiene oral
Infância

Objetivos: O objetivo deste estudo consistiu na avaliação da prevalência da cárie dentária, índice cpod e CPOD em crianças em idade escolar e análise da associação entre os comportamentos de saúde oral e fatores sociodemográficos.

Métodos: Realizou-se um estudo transversal numa amostra de 605 crianças com idades compreendidas entre os 6 e os 12 anos de 27 escolas públicas do concelho de Sátão, Portugal. A cárie dentária foi avaliada através da realização de uma observação intra-oral. Os dados relativos a comportamentos de saúde oral das crianças e variáveis sócio-demográficas foram recolhidos através de um questionário preenchido pelos pais. Prevalências foram expressas em proporções. As variáveis contínuas foram descritas utilizando a média e desvio padrão. Para comparação de proporções recorreu-se ao teste Qui-quadrado e o teste Kruskal-Wallis para comparação de variáveis contínuas.

Resultados: Verificou-se que o índice médio de cpod foi de $3,01 \pm 3,03$ e índice CPOD foi de $0,93 \pm 1,35$. A prevalência de cárie dentária está associada com a idade (≤ 8 anos, 37,1% vs 40,0%, $p = 0,008$), o nível de escolaridade dos pais (0-4 anos, 4-9 anos, >9 anos, 41,2% vs 43,7% vs 13,8%, $p = 0,001$) e área de residência (rural, 42,2% vs 31,2%, $p = 0,003$). A cárie dentária encontra-se também associada a comportamentos de saúde oral, como a escovagem (duas ou mais vezes por dia, 31,2% vs 42,2%, $p = 0,003$), uso do fio dentário (34,5% vs 42,3%, $p = 0,036$) e consultas regulares ao médico dentista (34,5% vs 41,2%, $p = 0,04$).

Conclusões: Encontrámos uma prevalência moderada de cárie dentária em crianças bem como uma percentagem considerável com a presença de múltiplas lesões cáries. A cárie dentária encontra-se associada a aspectos sócio-demográficos e comportamentais.

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Introduction

Oral pathologies, such as dental caries and periodontal diseases, are among the most prevalent worldwide.¹ They are responsible for a high morbidity among the population, being associated with decreasing quality-of-life and direct and indirect costs, such as expensive treatments and labor and school absence.^{2,3}

In most of the developed countries, the prevalence of high severity dental caries has been decreasing to moderate and low, while in developing countries there has been an increasing of its severity, from low to moderate.^{1,4} This is due to a group of preventive measures carried out in the populations, leading to a significantly improvement of their oral health.

Dental caries is a post-eruptive, infectious disease characterized by a gradual dissolution and destruction of the mineralized tissues of the teeth. Invariably, the absence of treatment will lead to worse and more extended lesions, progressing toward the dental pulp, resulting in a progressive increase of the pulp's inflammation, coexisting with pain symptomatology.⁵⁻⁷

With a etiology, affected by the modern society's numerous cultural, social and technological factors and being hard to explain its large variations in prevalence and incidence, dental caries is clinically characterized by a large polymorphism. Even today, it is a very complex pathological entity.^{6,7}

Dental caries can be assumed as a real biosocial disease, whose complications, not only affect the individual and the community's health, but also has a negative social and economical impact, namely among school-age children.⁸

In Portugal, oral healthcare is largely provided by the private sector. However, the implementation of the National Oral Health Promotion Program has provided school-age children with the essential necessary oral healthcare. This program includes not only secondary prevention measures, but also primary prevention ones, such as topical fluoride application and fissure sealants. Over the years, this program has led to a significant reduction of dental caries prevalence in schoolchildren, credit to the care provided through the oral health promotion programs, both in primary and secondary prevention.⁹

In the last few years, the decrease of dental caries prevalence among Portuguese children is also explained by a significant enhancement of oral hygiene habits, the use of fluoride toothpastes and an increased availability of preventive treatments.⁹⁻¹¹

Nevertheless, despite children and adolescents' oral health improvement, the latest national survey on the prevalence of oral pathologies revealed that the DMFT registered in adolescents aged from 12 to 15 years old was 1.48 and 3.04, respectively. This study associates the risk of developing dental caries, among younger children, with age and a less favorable socio-economic status.¹¹

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