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Letter to the Editor

Worst Socioeconomic Outcome Still Increase the Prevalence of Dental Caries in Pre-Schools of a Municipality of Great Port in the South Brazil

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Dear Editor-in-Chief

Dental caries is a complex, multifactorial disease that affects a large proportion of the world's population. In pre-school children, the prevalence of dental caries is especially high in the developed and developing countries (1,2). In Curitiba, Brazil, it is estimated that 5-year-old preschool children from public and private schools, have a prevalence of 48.7% of decayed and treated teeth and pointed to the association of the disease with a large number of variables that include individual susceptibility, family and even access to health services (3).

The main goal of this research was to determine, through a cross-sectional epidemiological study, the prevalence of caries in the pre-school population of 5-year-old in the city of Curitiba, and to evaluate the association between the caries experience and socioeconomic and educational variables.

This is a cross-sectional epidemiological study that used a representative sample of 5-year-old preschool children living in the city of Curitiba, Brazil. For the representativeness of the population, equi-probabilistic sampling was performed considering the proportion of preschoolers aged 5, who attend public and private schools in the 9 regions of the city. Data collection included a socioeconomic and educational questionnaire sent to the parents and / or guardians. For the evaluation of dental caries, the ceo-d index was used according to The WHO criteria (4). The data obtained was tabulated and the statistical analyses were performed in the SPSS 14.0 (Chicago, IL, USA) and Stata programs. Descriptive analyses and analyses of the association between ceo-d and independent variables were performed using the chi-square test with significance level of $P \leq 0.05$.

Overall, 5-year-old pre-school children (n=401) were selected. 69.8% were from public schools and 30.2% were from private schools, of which 54.7% were male (n = 220) and 45.3% were female (n = 181). The prevalence of caries was 27.8% and the mean ceo-d index was 0.89 (± 2.07). The untreated carious component predominated (19.5%). Table 1 summarizes the gross

prevalence ratios and adjusted socioeconomic and educational variables in the selected individuals.

Table 1: Unadjusted association of DMFT with independent variables, significance level of 0.05. The adjusted prevalence ratio (APR) were considered the independent variables: school, maternal schooling, family income, and economic classification

Variable		*ceo-d ≥ 1 (n%)*	*ceo-d = 0 (n%)*	*Total*	*GPR (IC de 95%)*	*P ≤ 0.000*	*APR (IC de 95%)*	*P ≤ 0.000*
Type of school	Public	102 (36.43%)	178 (63.57%)	280	4.40 (2.38 – 8.14)	< 0.0001	2.47 (1.17 – 5.21)	0.018
	Private	10 (8.26%)	111 (91.74%)	121	1 (1)			
Gender	Female	43 (23.76%)	138 (76.24%)	181	1 (1)	0.091		
	Male	69 (31.36%)	151 (68.64%)	220	1.32 (0.95 – 1.82)			
Residing in the house	5 to 10 residents	38 (34.90%)	57 (24.40%)	95	1.34 (0.97 – 1.83)	0.068		
	Up to 4	71 (29.83%)	167 (70.71%)	238	1 (1)			
Mother education level	Up to 8 years	16 (20%)	64 (80%)	80	1.79 (1.12 – 2.87)	0.015	1.37 (0.85 – 2.22)	0.193
	> de 8 years	87 (35.95%)	155 (64.05%)	242	1 (1)			
Father education level	Up to 8 years	24 (26.67%)	66 (73.33%)	90	1.31 (0.89 – 1.93)	0.170		
	> de 8 years	78 (34.98%)	145 (65.02%)	153	1 (1)			
Type of house	Not Own	63 (58.8%)	44 (41.12%)	97	1.47 (1.07 – 2.02)	0.016		
	Own	58 (27.88%)	150 (75.12%)	208	1 (1)			
Rooms in the house	Up to 4 rooms	35 (44.87%)	43 (55.13%)	78	1.56 (1.14 – 2.14)	0.005		
	> 4 rooms	72 (28.7%)	179 (71.3%)	251	1 (1)			
Family Income	> R$1.500	39 (63.93%)	22 (36.07%)	61	1.66 (1.11 – 2.49)	< 0.0001	1.02 (0.66 – 1.56)	0.924
	R$1,501,00 to R$2,500	40 (55.56%)	32 (44.44%)	72	2.05 (1.45 – 2.89)			
	> R$2.501	58(21.84%)	210 (78.36%)	268	1(1)			
Brazilian Economic Ranking	C	61 (42.1%)	84 (57.9%)	145	5.74 (2.59 – 12.72)	0.002	1.37 (0.96 – 1.95)	0.081
	B	45 (25.86%)	129 (74.14%)	174	3.63 (1.57 – 7.95)			
	A	6 (7.32%)	76 (92.68%)	82	1 (1)			

Note: GPR = Gross prevalence ratio, APR = Adjusted prevalence ratio

Despite the limitations in the present study, the collected data allows us to suggest that there is a decrease in the prevalence of dental caries in this population, although more attention should be given to the family nucleus and caregivers.
In summary, an association was found between the prevalence of dental caries and socioeconomic and educational factors in preschoolers and the prevalence of caries disease was directly related to the school in which the child was studying, maternal schooling and social class.

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Conflict of interest

The authors declare that there is no conflict of interests.

References

1. Kassebaum NJ, Bernabé E, Dahiya M, Bhandari B, Murray CJ, Marcenes W (2015). Global burden of untreated caries: a systematic review and metaregression. *J Dent Res,* 94(5):650-658.
2. Declerck D, Leroy R, Martens L, et al (2008). Factors associated with prevalence and severity of caries experience in preschool children. *Community Dental Oral Epidemiol*, 36:168-178.
3. Barbosa APM, Kriger L, Moysés ST, Moysés SJ (2007). Prevalência da doença cárie em crianças de cinco anos de idade na cidade de Curitiba – análise crítica. *Epidemiologia e Serviços de Saúde*. 16; 2.
4. WHO (2003). The World Oral Health Organization Report 2003. Continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme. Geneva, WHO, 2003.