

Presence of Sealants in Children Between 6 to 12 Years Old Attending Public Schools, Coronel Oviedo, Paraguay, 2015

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Abstract

A descriptive observational cross-sectional study was done to determine the presence of sealants in children between 6 to 12 years old attending public schools in Coronel Oviedo, Paraguay, 2015. After obtaining the informed consent of the parents of the children, the oral inspection was carried out. The study variable was the presence of sealant in posterior teeth. Only 2.91% of the 514 students inspected had sealants. Of the children who had sealants 26.7% had 8 years old, 60% correspond to female and 80% to urban area. The use of sealants as a prevention method in children was low.

Key words: Sealants; Dental; Children; Prevalence

Introduction

One of the oral diseases that can be prevented is caries, however, it continues to affect eighty percent of the child population in Latin America and the Caribbean [1]. Preventive treatment options for tooth decay include tooth brushing with a fluoride toothpaste, use of fluoride supplements and application of dental sealants and topical fluorides at dental clinics. Some evidence suggests that applying resin-based sealants to the biting surfaces of permanent back teeth in children may reduce tooth decay in the permanent teeth of children by 3.7% over a two-year period, and by 29% over a nine-year period, when compared with fluoride varnish applications [2].

Dental sealants are applied to form a physical barrier that prevents growth of bacteria and accumulation of food particles in the grooves of back teeth [3]. Sealants can have a 68,52% of efficacy if it is done properly [4]. Children who have sealants are much less likely to develop tooth decay than children who do not have sealants [5]. In Paraguay, the program "Save the first Molar" that was promoted from 2010 to 2015 had in their operative activities, the application of sealants in children in the rural schools but there are not studies about the results of it. The aim of this study was to determine the presence of sealants in children between 6 and 12 years of age attending public schools in the city of Coronel Oviedo in 2015.

Methodology

A descriptive observational cross-sectional study was carried out in male and female children between 6 and 12 years of age attending public schools in the city of Coronel Oviedo in 2015. Children from 10 institutions of the 1st to the 6th year were included whose parents or guardians signed an informed consent authorizing their participation in the investigation. We ex-

cluded the children who do not want to participate in the study. For the determination of the sample size, the following parameters were considered: an expected prevalence of 6%, a confidence level of 95% and a precision of 2%, these data being loaded in the epiinfo version 3.5.1 program, yielding a size sample of 514. The sample was stratified by geographic zones: urban and rural, considering schools as conglomerates. Subsequently, by proportional allocation, the sample was distributed in the 10 schools.

For recruitment, a visit was made to the schools chosen for the study, permission was requested from the director of the institution for the corresponding delivery of informed consents. After obtaining the informed consent of the parents or guardians of the children in these schools, the oral inspection was carried out to complete the clinical record and odontogram. These data were used only for the purposes of the investigation. The study variable was the presence or absence of pit and fissure sealant in posterior teeth, also age, sex, and the zone of origin.

The materials necessary for the oral inspection were sterilized for each inspection day, being properly disinfected among patients with 2% glutaraldehyde. The inspection began on the upper right side, series 14 to 17, then we moved to the upper left side, series 24 to 27, then we went to the lower left side, series 34 to 37, and finally to the lower right side, series 44 to 47. The data was loaded into an Excel 2014 electronic spreadsheet and analyzed using Stata 14. Descriptive analysis was done and the results are presented in tables and graphs. We respected the autonomy of the patient, and used an informed consent.

Results

During the month of November 2015, we interviewed 514 children from 6 to 12 years old. Of the population of study 57%

was female and 79,96% of the urban zone (Table 1).

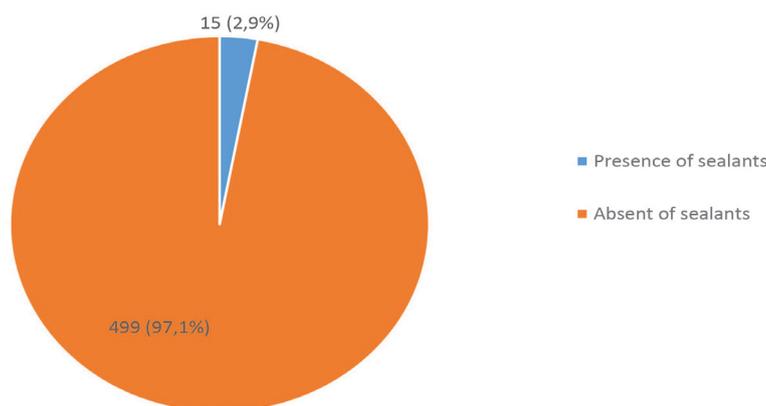
Table 1: Demographic characteristics of the population of the study "Present of sealants in children between 6 and 12 years of age in public schools in the city of Coronel Oviedo in 2015". n: 514

Age	n (%)
6	50 (9,73)
7	95 (18,48)
8	73 (14,20)
9	88 (17,12)
10	82 (15,95)
11	68 (13,23)
12	58 (11,28)
Sex	
Male	221 (43,00)
Female	293 (57,00)
Zone	
Rural	411 (79,96)
Urban	103 (20,04)

Table 2

Age	Presence of sealants n(%)	
	Yes	No
6	48 (9,62)	2 (13,33)
7	92 (18,44)	3 (20,00)
8	69 (13,83)	4 (26,67)
9	86 (17,23)	2 (13,33)
10	80 (16,03)	2 (12,33)
11	66 (13,23)	2 (13,33)
12	58 (11,62)	0 (0,00)
Sex		
Male	215 (43,09)	6 (40,00)
Female	284 (56,91)	9 (60,00)
Zone		
Rural	408 (81,76)	3 (20,00)
Urban	91 (18,24)	12 (80,00)

Figure 1. Presence of sealants in children between 6 to 12 years old attending public schools in Coronel Oviedo, Paraguay in 2015. n: 514



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Figure 1: Presence of sealants in children between 6 and 12 years of age attending public schools in the city of Coronel Oviedo in 2012. n: 514.

Regarding the prevalence of dental sealants, a total of 15 students presented sealants, corresponding to 2.91% of the 514 students inspected. (Figure 1).

Of the children who had sealants 26.7% had 8 years old, 60% correspond to the female and 80% were of urban area Table 2). There were not statically associations between the use of sealants and age (p:0.309) or sex (p: 0,456).

Discussion

In our study we found only 2.9% of sealants. This is very low comparing to the study of Alemán in Nicaragua in 1237 children, where 11,90% had sealants in 2012 [6]. This could be because our study was done in a city from the interior of the country that belongs to one of the poorest departments of the country.

In this study we found that the majority of the people that had

sealants were 8 years, female sex and of the urban area. Almarstar concluded that variables such as age and sex are not related to the Oral Hygiene Index or the presence of sealants [7]. But regarding to the zone, it makes sense since the rural area have less access to health services. Even there is evidence that applying sealant to the occlusal surfaces of the posterior permanent teeth significantly reduces the CFU / cm2 count of S. mutans [8], in this study the use of this as a preventive method is not shown. The social health minister of Paraguay needs to emphasize dental care and include prevention treatments in schools.

Conclusion

The use of sealants as a prevention method in children of 6 to 12 years of the city of Coronel Oviedo Paraguay is low.

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