

Impact of Malocclusion, Dental Trauma and Developmental Defects of Enamel in Quality of Life Among Children of 3 to 5 Years Old in Salvador, Bahia, Brazil, 2018

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ABSTRACT

Objectives: To describe malocclusions, dental trauma and dental enamel changes in children aged 3 to 5 years-old in the city of Salvador-BA, and to investigate the impact of these problems on their OHRQoL, considering the influence of sociodemographic variables.

Methodology: A study was conducted with 1591 children aged 36 to 71 months attending randomly drawn health units and municipal day care centers in Salvador, Bahia, Brazil. The clinical examination was performed, and a questionnaire was administered to those responsible for identifying sociodemographic and behavioral aspects and OHRQoL using Early Childhood Oral Health Impact Scale (B-ECOHis). Descriptive, univariate and multivariate results using robust Poisson regression was performed, with a significance level of 5%.

Results: Of the total, 16.28% of children had mild malocclusion and 23.82% had moderate or severe malocclusion, and the most prevalent was open bite. 22.31% of the children had at least one type of dental trauma, with limited fracture in the enamel was the most prevalent. 9.24% presented enamel alteration, with hypoplasia being the predominant one (65.24%). Regarding OHRQoL, a significant association was found with the child's age >55 months (adjusted PR = 1.62; 1.35-1.93 95% CI), five or more persons in the household (adjusted PR = 1.50; 1.26-1.79 95% CI) and enamel changes (adjusted PR = 1.31; 1.03-1.68 95% CI).

Conclusion: There was a high prevalence of oral diseases investigated and the older age, higher family density and enamel changes had a negative impact on the OHRQoL of children and their families.

Keywords

Epidemiology, Malocclusion, Dental trauma, Developmental defects of enamel, Oral health, Preschoolers, Quality of life.

Introduction

Quality of life is a subjective concept that considers the individual's perception of their position in life, taking into account the cultural context in which they live, their values and expectations, as well as aspects of their physical health associated with mental and social

well-being [1].

In dentistry, only oral clinical characteristics would not represent the impact of quality of life on the physical, social and mental well-being of individuals. This fact led to the development of the multidisciplinary concept of oral health-related quality of life (OHRQoL), which involves physical, psychological, family, among others, and has been studied in different countries [2]. In Brazil, the Questionnaire Quality of Life Related to the Oral

Health of Preschool Children (B-ECOHIS) has allowed to increase the knowledge about the conditions that affect the quality of life of children [3-5].

The oral health conditions of Brazilian preschoolers are characterized by the marked presence of oral diseases, such as: malocclusion, dental trauma and enamel structure injuries, in addition to early dental caries. In a national study, the prevalence of malocclusion among Brazilian preschoolers revealed that 22.01% of 5-year-old had mild malocclusion (especially mild giro-version, crowding and spacing) and 14.45% had moderate or severe malocclusion (open bite or cross-bite) [6]. In Salvador, a significant occurrence of this condition was also observed in children of the same age: about 24.9% of them had mild malocclusion and 12.7% moderate or severe malocclusion [7]. The prevalence of dental trauma in Brazil varies from 10 to 60%, according to recent investigations [4,8-10]. In childhood, dental trauma may have consequences that directly affect the quality of life of preschoolers such as painful symptoms, aesthetic changes and malocclusion [9].

Dental enamel is a tissue that has no remodeling capacity, so during its formation enamel changes may occur, such as hypoplasia, which is a deficiency in the amount of issue. Other changes that can be observed are deficiencies in mineralization, known as enamel opacities. They may be demarcated or diffuse. The diffuse opacity can be seen linearly or in plaques and may be called dental fluorosis [11]. The prevalence of enamel changes in primary dentition ranges from 23.9% to 77.3%. The literature reports that enamel disorders may predispose to tooth decay, tooth sensitivity, malocclusion and aesthetic problems in preschoolers [12].

Oral disorders can negatively affect the quality of life of children and their families, causing pain, difficulty of sleeping, function loss, feeding difficulties, which may result in weight loss, and may also cause psychological problems in children, such as low self-esteem, introspective, as well as being a causal factor to be more vulnerable to bullying in school [4]. Dental care in the early years of life allows the identification of risk factors for oral diseases, enabling the planning and execution of preventive and curative procedures that could reduce the impact of these problems on daily life of these individuals [12]. Thus, the aim of this study was to describe malocclusions, dental trauma and dental enamel changes in children aged 3 to 5 years-old in the city of Salvador-BA, and to investigate the impact of these problems on their OHRQoL.

Methodology

A cross-sectional epidemiological study was conducted and data were collected between August and November 2018 in Salvador, the capital of the State of Bahia, Brazil. The city is geographically divided into 12 (twelve) administrative and health districts, with all approximately 3 million inhabitants residing in urban areas.

A pilot study was first performed at a convenience municipal public daycare center in March 2018 to test the methodology and understanding of the instruments. Data collection from the main study was performed with the children and their mothers or

guardians. Children who participated in the pilot study were not included in the main study.

The sample of the study, obtained in multiple stages, was calculated considering 10% of event prevalence, standard error of 2.9%. A 95% confidence interval was used and the prevalence of the impact of oral conditions on the OHRQoL of children and their families determined in the pilot study (30%) was used to calculate the sample size, estimated at 1031 children. The correction factor of 1.5 was used to increase accuracy. The minimum sample size to meet the required criteria were 1412 individuals. However, the sample was increased by 15% to compensate for possible losses, totaling 1623 children.

The sample distribution was proportional to the total number of children enrolled in municipal public daycare centers in each health district. Nurseries and health facilities were randomly selected in each area. At the time of oral exams all children between 36 and 71 months present were evaluated.

The collection team consisted of three teachers of oral public health from the School of Dentistry of Federal University of Bahia and eight students from the same course, all calibrated. The theoretical-practical training took place from the discussion of epidemiological indicators and they use slides with images of the oral alterations investigated to discuss the doubts. The inter-examiner calibration took place in a public daycare center, when 30 children from 3 to 5 years old were examined. The intra-examiner calibration was measured during the data collection, when 10% of the exams were repeated seven days after the first exam. Cohen's Kappa value and the agreement index were used (inter and intra-examiner agreement indices equal to or greater than 90% and Kappa equal to or greater than 0.77 for all oral conditions evaluated).

The oral visual inspection of children's teeth were performed with them sitting, under natural light, with the aid of a mirror, periodontal probe of World Health Organization (WHO) and personal protective equipment. The classification proposed by Andreasen et al. [14] was used for the diagnosis of dental trauma. Changes in dental enamel were evaluated based on the criteria defined by the International Dental Federation - Commission on Oral Health, Research and Epidemiology [15]. The presence of any trauma related alteration or enamel defects according to the criteria above, respectively, were considered presence of trauma or enamel alteration during data analysis.

The description of malocclusion among children was based on the Foster and Hamilton Index [16], which consists of four measures: canine brace, overjet, overbite and posterior crossbite. The measurement (in millimeters) was performed with the teeth in occlusion and the probe parallel to the occlusal plane. The malocclusion Index was also adopted for the evaluation of occlusion. This was established in 1987 by the WHO and is used today for both deciduous and permanent dentition, classifying occlusion types as normal and mild and moderate / severe malocclusion. The presence of the disease in the analyzes was

defined as the presence of mild or moderate/ severe one.

The questionnaire was addressed to the mothers or guardians of the children and was self-administered. It contained child identification and sociodemographic data - gender (male / female), age (36- 55 months / over 55 months), ethnicity (white / others), maternal and paternal education (Up to 8 years of schooling / \geq 8 years of schooling) and number of people in the household (\leq 4/5 or more). The caregivers were also asked to answer questions regarding OHRQoL using B-ECOHIS. The Early Childhood Oral Health Impact Scale (ECOHIS) [17] consists of 13 items that relate to two sections: Child Impact and Family Impact. The first has four sub-scales: symptoms, functions, psychological and social interaction. The family impact section has two subscales: stress and family function. The Brazilian version of Early Childhood Oral Health Impact Scale (B-ECOHIS) has been culturally adapted and validated [5].

The overall impact on OHRQoL was considered present during data analysis when there was at least one positive response (frequency equal to or greater than 'sometimes') for any of the items in this instrument. Similarly, Child and Family Impact on OHRQoL were considered when there was at least one positive response to the items in each of these B-ECOHIS sections, respectively. The General, Child and Family Impact on OHRQoL were the three dependent variables considered in the exploratory (univariate) and multivariate analyzes performed. Sociodemographic conditions, such as age of the child, gender, maternal and paternal education and number of people in the child's home, as well as the prevalence of oral diseases malocclusion, trauma and enamel alteration, separately, were evaluated as independent variables.

Data were entered into EXCEL [18] and analyzed at STATA 14 [19]. Descriptive analyzes of the sociodemographic conditions and oral diseases investigated were performed. Pearson's chi-square test was used for exploratory analyzes of potential factors associated with impact on OHRQoL, observing a significance level of 5%. Robust Poisson regression was used to estimate prevalence ratios and their respective 95% Confidence Intervals, considering the three dependent variables (General, Child and Family Impact on OHRQoL) and the independent variables. In multivariate analysis, the stepwise forward method was used to include them in the final adjusted models. Independent variables with a p-value <0.20 for each outcome in the univariate analysis were incorporated, and those with a p-value <0.05 were maintained in the final models. Poisson regression with robust variance was used as multiple analysis to determine the potential variables associated in each model.

The study was approved by the Research Ethics Committee of the School of Dentistry of the Federal University of Bahia (Brazil) (CAAE 78351317.0.0000.5024).

Results

In the present study, 1591 preschoolers with a mean age of 56 months were evaluated. Most children were male (50.41%), mixed

race or black (93.34%), and most mothers (81.02%) and parents (76.68%) of the children were over 8 years of study and they live in households with up to 4 people (76.05%) (Table 1).

	Variables	N	%
Gender	Boys	802	50.41
	Girls	789	49.59
Age (in months)	36 - 55	785	49.34
	> 55	806	50.66
Skin color	White	106	6.66
	Black/ Brown	1485	93.34
Maternal years of schooling	> 8	1289	81.02
	\leq 8	302	23.72
Paternal years of schooling	> 8	1220	76.68
	\leq 8	371	23.32
Numbers of persons in the house	\leq 4	1210	76.05
	>5	381	23.95
Open Bite	Absent	1371	86.17
	Present	220	13.83
Malocclusion	Normal	953	59.90
	Mild	259	16.28
	Moderate/ Severe	379	23.82
Occlusion position of Canines	Class I	1418	89.13
	Class II	89	5.59
	Class III	84	5.28
Overjet	Normal	1259	79.13
	Severe	140	8.80
	Edge- to- edge	107	6.73
	Anterior crossbite	85	5.84
Overbite	Normal	1147	72.09
	Underbite	50	3.14
	Open	220	13.83
	Deep	174	10.94
Posterior crossbite	Absent	1481	93.08
	Unilateral	92	5.78
	Bilateral	18	1.13
Traumatic Dental Injury	Absent	1236	77.69
	Present	355	22.31
	Colour change	106	23.87
	Enamel crack	38	8.55
	Enamel fracture	256	57.65
	Enamel and Dentine fracture	28	6.30
	Pulpal exposition	6	1.35
	Tooth avulsion	10	2.28
Development defects of enamel	Absent	1444	90.76
	Present	147	9.24
	Hypoplasia	92	65.24
	Opacity	40	28.37
	Fluorosis	9	6.39

Table 1: Sociodemographic and oral health conditions distribution in preschool children from Salvador- BA, 2018. (n=1591).

In relation to oral disorders, open bite was the most common malocclusion condition (13.83%). Malocclusion classified as moderate or severe was more prevalent (23.82%), but the majority of children did not present any alteration (59.90%). Of the children examined, 10.87% showed changes in the canine key, 8.80% had high overjet, and 10.94% deep overbite. The unilateral posterior crossbite occurred in 5.78% of the children (Table 1).

The prevalence of dento- alveolar trauma was 23.31%. Fracture limited to enamel (56.65%) and changing in dental color (23.87%) were the most frequent conditions. Regarding enamel changes, 9.24% of the children had the pathology, and hypoplasia was the most frequent (65.24%), followed by opacity (28.37%) (Table 1).

With regard to OHRQoL assessed through B-ECOHIS, it was found that 18.60% of children experienced pain sometimes and 1.95% of them experienced pain frequently. Parents also reported difficulty drinking hot or cold beverages (6.98%) and eating certain foods (10.12%) due to problems with their teeth, mouth or jaws. It was observed that 9.74% of the mothers or guardians of the children were sometimes upset or guilty, due some oral problem of

the child (Table 2).

When it was analyzed the association between independent variables and the impact on general quality of life, age, maternal education, paternal education, number of people in the household and enamel changes were associated with the conditions in the univariate model ($p < 0.05$). Age, maternal education and the number of people living at home were associated with the impact on children's quality of life ($p < 0.05$); and age, the number of people living at home, malocclusion and enamel changes were associated with the impact on family quality of life ($p < 0.05$) (Table 3).

In the adjusted multivariate models that considered the impact on the general and children's quality of life, the variables that were positively associated with the outcome- age and the number of people in the child's home. With the outcome impact on family quality of life, age was positively associated (Adjusted PR = 1.62; 1.35-1.93 95% CI), the number of people in the household (Adjusted PR = 1.50; 1, 26- 1.79 95% CI) and enamel changes (Adjusted PR = 1.31; 1.03-1.68 95% CI) (Table 4).

Impacts		Never (%)	Hardly never (%)	Occasionally (%)	Often (%)	Very often (%)	Don't Know (%)
Child (How often has your child had...)	Pain in the teeth. mouth or jaws	70.46	7.48	18.60	1.95	0.57	0.94
	Difficulty drinking hot or cold beverages	86.24	4.46	6.98	0.94	0.57	0.82
	Difficulty eating some foods	83.85	3.96	10.12	1.13	0.63	0.31
	Difficulty pronouncing any word	93.02	2.20	2.58	0.44	0.31	1.13
	Missed preschool. day care or school	93.15	2.64	3.52	0.31	0.13	0.25
	Difficulty in any daily activity	94.34	2.64	2.58	0.13	0.13	0.19
	Had trouble sleeping	91.51	2.89	4.46	0.68	0.25	0.19
	Been irritable or frustrated	89.00	3.39	5.66	1.01	0.38	0.57
	Avoid Smiling or laughing	94.72	1.89	2.33	0.44	0.38	0.25
Avoid talking	96.35	1.38	1.76	0.06	0.19	0.25	
Family (How often have you or another Family member... because of your child's dental problem)	Financial impacts	92.02	2.45	3.71	0.69	0.75	0.38
	Been upset	83.41	2.89	9.74	2.20	1.51	0.25
	Felt guilty	83.03	3.58	9.11	1.76	2.26	0.25
	Taken time off from work	91.26	3.08	4.15	0.57	0.75	0.19

Tabla 2: B- ECOHIS responses of parentes/ caregivers of preschool children from Salvador-BA. 2018. (n=1591).

Variables		Impact of oral health- overall		Child impact		Familiar Impact	
		%	p- value	%	p-value	%	p-value
Gender	Boys	40.90	0.13	35.66	0.12	23.75	0.25
	Girls	44.61		39.42		26.27	
Age (in months)	36 a 55	33.25	0.00	27.64	0.00	19.11	0.00
	>55	51.99		47.15		30.76	
Skin color	White	38.68	0.38	35.85	0.71	20.75	0.30
	Black/ brown	43.03		37.64		25.30	
Maternal years of schooling	>8	41.19	0.01	36.15	0.02	24.26	0.16
	≤8	49.34		43.38		28.15	
Paternal years of schooling	>8	41.48	0.06	37.21	0.64	24.24	0.21
	≤8 anos	46.90		38.54		27.49	
Numbers of persons in the house	≤ 4	40.66	0.00	36.12	0.04	22.33	0.00
	>4	49.34		41.99		33.51	

Malocclusion	Absent	43.55	0.43	37.78	0.80	26.47	0.01
	Present	41.54		37.15		22.80	
Traumatic dental injury	Absent	41.91	0.21	37.30	0.73	24.78	0.70
	Present	45.63		38.31		25.78	
Development defects of enamel	Absent	41.97	0.05	37.05	0.22	24.15	0.01
	Present	50.34		42.18		33.33	

Table 3: Impact of sociodemographic variables and oral health problems on oral health quality of life- general, child impact section, familiar impact section using B-ECOHIS. Salvador-BA. 2018. (n=1591).

Variables		Impact of oral health- overall		Child Impact		Family impact (Modelo 1)		Family impact (Modelo 2)	
		PR (CI95%)	p-value	RP (IC95%)	p-value	PR (C95%)	p-value	PR (C95%)	p-value
Gender	Boys	1.0	0.07	1.0	0.70	1.0	-	1.0	-
	Girls	1.11 (0.99 - 1.24)		1.12 (0.99 - 1.27)		1.0			
Age (in months)	36 a 55	1.0	0.00	1.0	0.00	1.0	0.00	1.0	0.52
	>55	1.57 (1.38 - 1.75)		1.71 (1.49-1.95)		1.62 (1.35-.93)		1.60 (1.34-.1.91)	
Maternal years of schooling	>8	1.0	0.10	1.0	0.07	1.0	0.53	1.0	-
	≤8	1.12 (0.98 - 1.29)		1.14 (0.99- 1.32)		1.07 (0.87-.31)		1.06 (0.87-1.31)	
Paternal years of schooling	> 8	1.0	0.47	1.0	-	1.0	-	1.0	0.03
	≤8	1.05 (0.92 - 1.99)		1.0		1.0			
Malocclusion	Absent	1.0	-	1.0	-	1.0	0.15	1.0	-
	Present	1.0		1.0		0.88 (0.74-.05)		1.0	
Traumatic dental injury	Absent	1.0	-	1.0	-	1.0	-	1.0	-
	Present	1.0		1.0		1.0		1.0	
Development defect of enamel	Absent	1.0	0.09	1.0	-	1.0	-	1.0	0.00
	Present	1.16 (0.98-1.38)		1.0		1.0		1.31 (1.03 1.68)	

Table 4: Adjusted prevalence ratios and confidence interval 95% for the association between impact on oral health quality of life (general, child impact section and familiar impact section) and sociodemographic conditions, malocclusion dental trauma injury and development defects in enamel in preschool children. Salvador-BA. 2018. (n=1591).

PR: Prevalence Ratio from Poisson regression

CI 95%: Confidence Interval 95%

Model 1: Adjusted by age, maternal years of schooling, numbers of persons in the house and malocclusion.

Model 2: Adjusted by age, maternal years of schooling, numbers of persons in the house and development defect of enamel.

Discussion

Oral disorders in preschoolers, such as malocclusion, have a high prevalence in Brazil. According to the findings of the national oral health survey, SB Brazil 2004 [6], 22.01% of children aged 0 to 5 years old had mild malocclusion and 14.45% had moderate or severe malocclusion. The prevalence of the problem found in the present study was even higher (23.82%), which corroborates the study by Morais et al. [20], which assessed the occurrence of malocclusion in the primary dentition in children aged 0 to 36 months, verifying that about 23.3% of the children had moderate or severe malocclusion. Almeida et al. [7] observed a prevalence of 12.7% of moderate/ severe malocclusion among children of the same age group in Salvador-BA.

Regarding the criteria of Foster and Hamilton [16], which were also used as indicators of malocclusion in this investigation, 10.87% of children had malocclusion related to canine braces (Class II or III), 8.8% high overjet, 6.73% edge-to-edge bite, 5.84% anterior cross bite, 13.83% open bite, 10.94% deep bite, 3.14% reduced over bite and 5.78% unilateral posterior cross bite. Some of these findings are similar to the study by Bauman et al. [13], who evaluated the

prevalence of malocclusion in 6.855 Brazilian preschoolers, using the database of the last SB Brasil [21], in which it was found whereas 22.9% of children had Class II or III canine position malocclusion, 22.8% high overjet, 3.1% anterior crossbite, 11.1% open overbite, 10.8% deep bite and 12.7% reduced overbite [21].

The literature shows that open bite is the most prevalent malocclusion in preschoolers, and the result was similar to the present study. Oliveira et al. [8], in Salvador-BA, found a prevalence of 26.3% of anterior open bite in children from 2 to 5 years- old, a finding superior to that of this study (13.83%).

Malocclusion can negatively interfere with the child's quality of life, causing pain, difficulty sleeping, loss of function, feeding difficulties, resulting in weight loss, and also psychological problems, such as low self-esteem and introspective, as well as being a factor causal for them to be victims of bullying at school, with an impact on quality of life [4].

However, in the present study there was no positive association between malocclusion and negative interference in the general

quality of life of the child and/ or family, which differs from the study by Carvalho et al. [22] in Belo Horizonte-MG, with 1069 pre-school children aged between 60 and 71 months. The authors concluded that the impact of malocclusion on OHRQoL was 32.7% among children and 27.1% among families. Sousa et al. [23] also identified a positive association between malocclusion and child and family quality of life among children aged 3 to 5 years-old in Campina Grande-PB, as well as Sakaryali et al. [24] in a sample of 107 children from 1 to 6 years old in Turkey.

The results of this study were similar to those of Abanto et al. [25], in a study carried out in São Paulo, with parents of 260 children, from 2 to 5 years-old with malocclusion did not identify a negative impact of malocclusion on the average of the OHRQoL or in each domain of the same indicator used here. Carminatti et al. [26] also did not show a negative impact of malocclusion on OHRQoL in a sample of 93 children treated at the pediatric clinic at the Federal University of Rio Grande do Sul.

Dental trauma injury is a public health problem in Brazil and affects a significant part of the population. In the present study, 22.31% of preschoolers had some type of dental trauma, and the most common trauma found were the enamel-limited fracture (57.65%), followed by color change (23.87%). This data is corroborated by the study by Oliveira et al. [8] whose, in a sample of 472 children from Salvador-BA, verified a greater presence of dental trauma (16.3%) in children under 42 months.

Similar to what occurred with malocclusion, the presence of dental trauma also had no negative influence on the OHRQoL of children and their families. Gonçalves et al. [4] evaluated a sample of 192 children in Florianópolis – Brazil and results corroborate the present study- the prevalence of dental trauma found by these authors was 62.5%, significantly higher than that observed in the current study. Díaz et al. [27] also found no association between the presence of dental trauma and OHRQoL among children aged 1 to 5 years- old in Cartagena, Colombia.

Also, Siqueira et al. [9] evaluated 814 children aged between three and five years, in the city of Campina Grande - Brazil, and verified the prevalence of 34.6% of dental trauma in the sample, with the upper incisors (88.4%) the teeth more affected, followed by the lateral incisors (8.9%). Among the injuries found, it was found that enamel fracture was the most common type (17.0%), followed by tooth discoloration (11.2%), and no positive relationship was found between the presence of malocclusion and dental trauma with the quality of life of children and their families, results similar to those seen in the present study.

However, other authors had investigated and showed that the presence of dental trauma among preschoolers was associated with OHRQoL [3,24,25,28]. For example, Gomes et al. [10] evaluated a sample of 832 pre-school children in Campina Grande - PB, and observed 34.1% of children with dental trauma. Regarding the parents' feeling of guilt, there was an association with the occurrence of tooth avulsion/ dislocation and tooth discoloration.

These findings differ from the present study, which found no association between dental trauma and impact on general, child or family quality of life. It may have occurred due to the higher prevalence of less severe trauma. Borges et al. [29] after analyzing ten studies comprising a population of 7.461 children of preschool age, suggested that clinical criteria may overestimate the occurrence of oral disorders in relation to the perception of individuals and their families about their own oral conditions.

Approximately 9.24% of the children examined had some enamel alteration-hypoplasia (65.4%), opacity (28.37%) or fluorosis (6.39%). A negative impact of enamel changes was observed on family OHRQoL. The epidemiological study by Faria et al. [30] carried out in Diamantina- MG, which examined 209 children aged 3 to 5 years old, found a higher prevalence of this oral problem (29.9%), and registered the following changes: demarcated opacity (16.8%), diffuse opacity (15.7%) and hypoplasia (4.2%) as the most relevant changes.

Scarpelli et al. [31] also investigated the impact of malocclusion, dental trauma and enamel defects on children's and family OHRQoL and did not find any negative influence of these problems on the quality of life of children or their families, the same results as Corrêa- Faria et al. [32] in a sample of 646 children in the city of Diamantina- MG.

In this study, children with the most unfavorable socioeconomic conditions had a greater negative impact on OHRQoL. Other previous studies have reported that socio-economic aspects influence the OHRQoL of preschoolers and schoolchildren [27,28,31,33-35] It is valid to clarify that the clinical findings of oral problems and OHRQoL is mediated by social, psychological and environmental factors in general. Understanding the mediation of these factors and the regional variations that can happen in Brazil is fundamental due to social inequalities.

This study described oral conditions and analyzed OHRQoL in preschoolers through a representative and random sample from the city of Salvador-BA, which represents an advantage in relation to most of the investigations already carried out. In addition, oral diseases were investigated based on well-defined criteria in the literature, with multivariate analyzes that take into account sociodemographic characteristics. Its limitations are inherent to those of cross-sectional studies, which limit the investigation of causal relationships between the variables studied at the time of data collection. Studies with a longitudinal outline can better clarify these relationships.

Conclusion

Of the total, 23.82% of the children had moderate or severe malocclusion, and the most prevalent was open bite (13.83%). Trauma was identified in 22.31% of the population, with fractures limited to the enamel the most prevalent one. The enamel alteration happened in 9.24% of the children, with hypoplasia being the predominant one (65.24%). With regard to OHRQoL, a significant association was found with the child's age (Adjusted PR

= 1.62; 1.35-1.9395% CI), the number of people in the household (Adjusted PR = 1.50; 1.26- 1.7995% CI) and enamel changes (Adjusted PR = 1.31; 1.03-1.68 95% CI).

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