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Judul : Dental Caries and Associated Factors Among Primary School Children in Metropolitan City With The Largest Javanese Race Population: A Cross-Sectional Study

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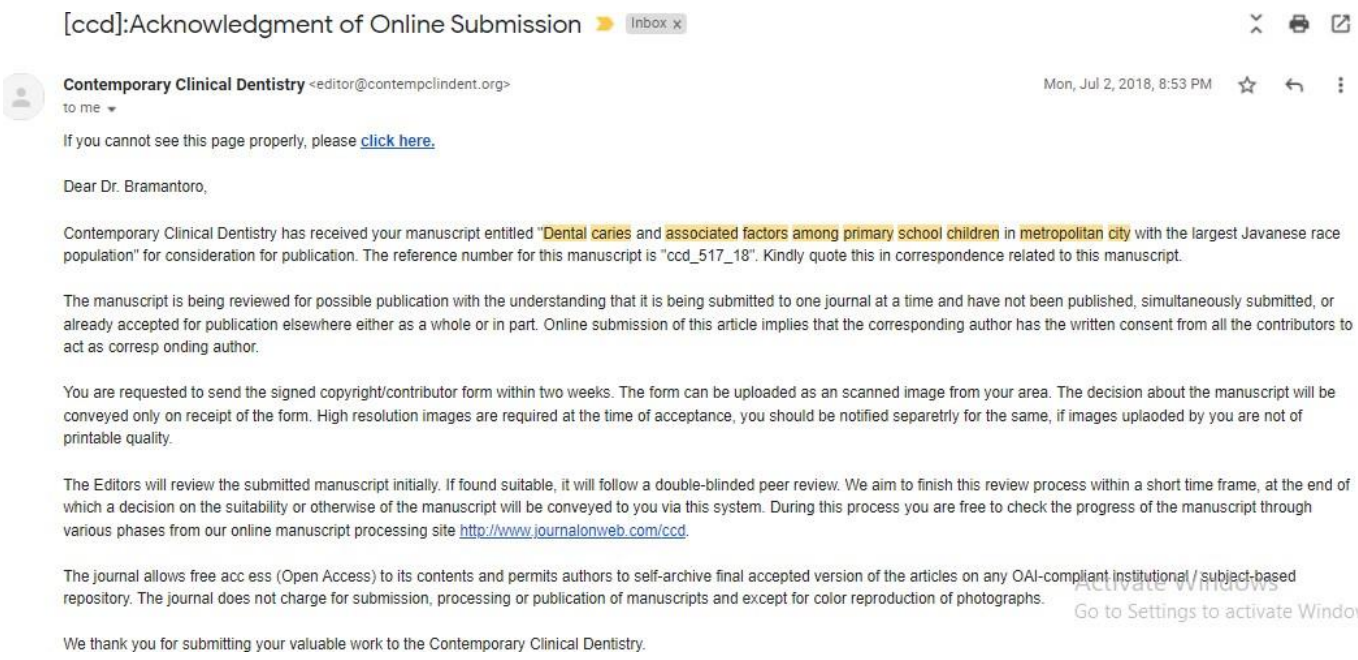

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Dental caries and associated factors among primary school children in metropolitan city with the largest Javanese race population: A cross-sectional study

Abstract

Background: Dental caries is the most prevalent and chronic oral disease, particularly in childhood age. Dental caries is a progressive infectious process with multifactorial etiology. **Aim:** To examine the prevalence of dental caries and its associated factors among primary school children at Surabaya, as the metropolitan city with the largest Javanese race population in Indonesia. **Settings and Design**: A school based cross-sectional study was conducted at Surabaya in August, 2017. Cluster random sampling technique was used to select the children. Structured questionnaire by World Health Organization (WHO) was used to interview children and/or parents to collect socio-demographic variables. Clinical dental information was obtained by experienced dentist using dental caries criteria set by WHO. Binary and multiple logistic regression analysis were computed to investigate factors associated with dental caries. **Results**: Of the 213 children, 50.4% were boys. Majority (99%) of the children cleaned their teeth using toothbrush. The proportion of children having dental caries was 53%. Decay-missing-filled (DMF) score were 1, decayed-extracted-filled (def) score were 1.08, and total DMF and def score were 2.07. Toothbrush usage, soda consumption, and educational level of fathers were the associated factors for dental caries. **Conclusion**: Toothbrush usage, soda consumption, and educational level of fathers were the associated factors for dental caries. Therefore, prevention measures, such as health education on oral hygiene, dietary habits and importance of dental visit, are obligatory for children.

Keywords: Dental caries, Dental plaque, Children

Introduction

Dental caries is the most prevalent and chronic oral disease, particularly in childhood age. [1,2] Carious lesion constitutes a progressive infectious process with multifactorial etiology. [3,4] Dietary habits, oral microorganisms that ferment sugars, and host susceptibility have to coexist for dental caries to initiate and develop. [3-5] Dental caries has high morbidity potential. Thus, it has been the main focus of dental health professionals.[6]

Dental caries is caused by dental plaque deposits on the tooth surface.[7,8] Frequency and timing of fermentable carbohydrates intake, which will be metabolized by a certain bacteria, such as *Streptococcus mutans*, lead to fermentation and, therefore, produce copious amount of acid and lower the local pH to a level where the minerals of enamel and dentine dissolve. [3,5,7-12] The frequent intake of sweets, dry mouth, and poor oral hygiene may increase the chances for developing new carious lesion. [8,13] Besides, some risk factors, such as sex, age, dietary habits, socioeconomic and oral hygiene status are also associated with increased prevalence and incidence of dental caries in population. [14]

Dental caries in children may cause pain, discomfort, eating disorder, tooth loss and delayed speech. Furthermore, dental caries also affects on children's concentration in school and, at times, dental treatment expense may become certain financial burden on the families. [6,15]

Although the trend is not clear in developing countries, the number of dental caries has been increasing among children due to the uncontrolled intake of sugary substances, poor oral care practices and inadequate health service utilization.[16] Studies revealed that the prevalence of dental caries was higher among urban children. [15,17]

Indonesia faces significant challenges in relation to poor oral health in children; that remain untreated until they reach teenage and even adulthood, in which more than 70% are affected by experiences related to dental caries.[18] In a review of early childhood caries in Indonesia, according to study conducted in five urban communities of special capital region of Jakarta in 2008, it was recorded that prevalence of early childhood caries was 52.7%. [18] Another study showed that the prevalence of early childhood caries in group of children aged 6 months-3 years was 30.8 %. [19]

Indonesia is a tropical archipelago located at South-east Asian with more than 13,000 islands. [20] The number of Indonesian population reaches 260 millions that makes Indonesia as the fifth country with the most population in the world. [21] Indonesia is characterized by enormous cultural diversity with more than 300 ethnic groups that have been described. [20] Javanese constitutes as the largest ethnic group in Indonesia that occupies 41% of the total population. The majority of Javanese live in Java Island, and mostly are concentrated in Central and East Java. The capital city of East Java is Surabaya which is the second largest city in Indonesia. There are various ethnic groups live in Surabaya, yet the most of it is Javanese. Those background encouraged the authors to focus the study in Surabaya.

Although dental caries is more prevalent in school age children to date, however, there has been no well documented data on prevailing prevalence and associated factors in primary school children in Surabaya. Therefore, the current study was carried out to examine the prevalence of dental caries and its associated factors among primary school children in Surabaya as the metropolitan city with the largest Javanese race population in Indonesia.

Material and methods

Study design and area

A school based cross-sectional study was conducted from August, 2017 among primary school children in Surabaya. Surabaya is the second biggest city of Indonesia. According to the 2017 Central Statistical Agency of Indonesia's estimation, the city had a total population of 2.843.000. Urban primary school children under 12 years were accounted for 241,906. The town had a total of 2.843 urban primary schools spread in 5 area, South, North, West, East, and Center of Surabaya.

Study participants

Students of primary schools aged 10 to 12 years old and living in Surabaya were included in the study. Children aged 12 years old or above were excluded from the study.

Sample size and sampling

Sample size was calculated using single population proportion formula with assumption of 95% confidence level, 5% degree of precision and proportion of dental caries as much as 30.8% [18] to make the final sample size of 80. However, we obtained 213 students that provided complete response. Systematic random sampling technique was used to select the study participants. Among 5 area of Surabaya, 2 primary schools per area were selected using systematic random sampling technique. The sample size was allocated proportionally based on the number of children in each selected school. Children were selected randomly based on their name lists taken from their rosters in respective class.

Data collection

A structured questionnaire was used to collect socio-demographic characteristics, dietary habits, oral health problems and oral care practices. Dental examination was carried out for all selected children by one trained dental doctor using WHO dental caries diagnosis guide line under natural day light. Disposable wooden spatulas were used for intra oral examination. Prior the study, data collectors were given with intensive training on dental caries assessment

based on WHO guideline and also how to interview the children and fill the questionnaire for two days. Incomplete questionnaires were rejected during data analysis. Dental caries was defined as the presence of lesion in a pit or fissure or on smooth tooth surface, detectable softened floor, and undermined enamel or softened wall. When any doubt existed, dental caries was not recorded as present. Tooth was considered missing because of caries if a person gave a history of pain and/or presence of cavity prior to extraction.

The presence of dental plaque was assessed by direct visual inspection and palpation of the buccal and lingual surfaces of all teeth using clean glove and spatula. [22] Plaque was recorded as being present when visible deposits were detected and then following palpation of the teeth was removed by clean gloved hand. Moreover, the presence of both hypo calcification and incipient caries type of white spot lesions were examined by conventional diagnostic technique. [22] First, the wet teeth were inspected for the presence of hypo calcification type of white spot lesion then the teeth were allowed to wipe cleaned and dried with gauze and compressed air to inspect incipient caries type of white spot lesion. White spot lesion was recorded as being present when a white chalky appearance spot were revealed either in dehydrated or desiccated or both type of the upper and lower anterior of enamel.

Data analysis

Data was entered and analyzed using statistical package for social science (SPSS) version 25. Frequency and percentage were computed from univariate analysis to get summary values. Odd ratio with 95% confidence interval (CI) was computed using logistic regression analysis to assess the presence and degree of association between dental caries and independent variables. Significance was set at $p < 0.05$ (significance level 95%). For those variables that had a p-value < 0.05 on binary logistic regression, binary multiple logistic regression analysis was computed.

Ethical considerations

Ethical clearance was obtained from ethical review committee (certificate number: 211/HRECC.FODM/IX/2017). A written consent was obtained from children's parents before interview and dental examination. Cases of dental caries were advised to attend the nearby dental clinic.

Results

Sociodemographic characteristics

A total of 213 children were participated in the study. Of these, 50.4% were males. The majority of children (51%) were aged more than 10 years old. 99% of respondents came from wealthy families based on Badan Pusat Statistik (BPS) indicators. Approximately, 33% of respondents had high-educated fathers and 35% of respondents had mothers with secondary education level.

Practices related to oral hygiene

36% of respondents stated they rarely had toothache. 30% of respondents had never visited dentist in the past year. 33% of respondents came to the dentist due to complaints on their oral cavity. 61% admitted to brushing teeth twice or more a day. 99% of respondents used toothbrush to clean their teeth. 98% used toothpaste and 36% of them used fluoridated toothpaste.

Food consumption pattern and dietary habits

30% of respondents consumed fruit, 23% consumed sweets and sweet foods, and 27% consumed tea several times a week. As many as 36% of respondents consumed biscuits and 39% consumed milk every day. As many as 30% of respondents consumed fruit, 23% consumed sweets and sweet foods, and 27% consume tea several times a week. As many as

36% of respondents consumed biscuits, 39% consumed milk, and 5% of respondents consumed soda in every day.

Dental caries

53% of respondents suffered from dental caries. The average DMF score was 1, def was 1.08, and the total average DMF and def score was 2.07. The most missing permanent tooth was the first molar of the entire region, respectively. The most abundant primary tooth was the central incisors throughout the region, respectively.

Risk factors associated with dental caries

Based on bivariate analysis, there was a significant relationship between caries and father education, soda consumption, and the use of toothbrush to clean teeth. Based on multivariate analysis, the three variables showed significant relationship with p-value of 0.0001. Based on multivariate analysis, the three variables showed significant relationship with p-value of 0.0001. Respondents who did not brush their teeth using toothbrush were at least 1.6 times as likely to suffer from caries compared to those who did not use toothbrushes. Respondents with daily soda consumption were at risk for caries 3.3 times compared with those who did not consume soda. Respondents with fathers who had graduated from elementary school were at risk for caries 4.5 times compared with those who did not complete primary school.

Discussion

Surabaya is the second-most populous city in Indonesia with 2.848.583 people recorded in the chartered city limits in the 2015 census with the extended metropolitan development area called Gerbangkertosusila (derived from Gresik-Bangkalan-Mojokerto-Surabaya-Sidoarjo- Lamongan). It adds more than 12 million inhabitants in several cities and around 50 districts spreads over noncontiguous urban areas, including Gresik, Sidoarjo,

Mojokerto, and Pasuruan regencies. Though central government of Indonesia recognizes only the metropolitan area (Surabaya, Gresik, and Sidarjo) as Greater Surabaya (Zona Surabaya Raya) with a population of 8.319.229, Surabaya is now the second-largest metropolitan area in Indonesia. The city is highly urbanized with industries centralized in the city and it contains slums. Surabaya is an old city that has expanded over time, and its population continues to grow at roughly 0.52% per year. [23]

In Surabaya, there is scarcity of data on dental caries in primary school children. Dental caries is a common health problem among primary school children. The prevalence of dental caries found in the present study was 53%. The caries prevalence was higher than studies carried out in Gunung Anyar Surabaya in 2014 (30.8%) [24], However, the caries prevalence was equal to the results of a study conducted in Nepal (52%) [25] but higher than study conducted in Tanzania (17.6%) [26], Ethiopia (36.3- 48.1%) [8,27], and Nigeria (35.5%) [14], yet lower than India (77%) [28]. The difference could be due to difference in knowledge, attitude and practices (KAPs) on oral hygiene as our study was undertaken among urban school children.

The data collected in this study showed that low educational level of either parent were related to the presence of children's caries. These results corresponded to the results of similar studies which revealed an asociation between the presence of children's caries and the socioeconomic level of parents. [29,30] The adoption of good oral health habits in childhood often leads to positive results in the quality of the health and life of the children. [31] Previous studies have proved that children lives in poverty had infrequent dental visit, therefore, had higher prevalence of dental caries [7,32,33]. However, in this study, a clear association between family income and dental caries was not observed. This was comparable with a study done in Srilanka[32]. Parents and responsible adults are the principle actors in the children's

development in the first years of life. Thus, the interventions directed at parents' beliefs and attitudes about oral health may be beneficial in the prevention of oral problems, such as dental caries. Sufia S., et al. (2009) [34] in their study stated that the younger age of the parents, higher level of educational attainment, higher income due to better occupational status and urban residence all had strong association with dental caries and positive influence on dental health practices of the children. This can be attributed to the increased awareness regarding dental health among younger parents with higher level of educational attainment. Also, better occupational status of the parents provides for better accessibility to dental care.

Moreover, the usage of toothbrush for cleaning was significantly associated with dental caries. Children who had cleaned their teeth with toothbrush revealed a lower prevalence of dental caries. This may be attributed to the fact that toothbrush is more effective for removal of plaque from the tooth surface. The low prevalence of dental caries in toothbrush users may be due to the fact that the bristles of a tooth brush could reach and clean those inaccessible areas of oral cavity that might not be accessible to the finger and other materials. It is generally true that cleaning teeth will remove the food debris away from oral cavity. Therefore, *Streptococcus mutans* cannot get enough nutrient and time for growth so that there is no acid production which causes dental caries development. [22,35]

In this study, we confirmed that children with daily consumption of soda, or soft drinks, were at risk for caries 3.3 times higher compared with those who did not consume soda. In addition to the effect of soft drinks on caries development, frequent soft drink consumption may also lead to the erosion of enamel. [36] The acidic nature of soft drinks does not apply only to those containing sugar but also to sugar-free (diet) labeled soft drinks. [37] Both soft drinks and sports drinks have been proved to have a pH between 2.5 and 3.5 [38] The chronic exposure of tooth structure to beverages with a low pH may result in enamel wearing

away over time[38]. An increase in consumption results in more frequent exposure to low salivary pH which may accelerate caries process. The ideal pH of the oral cavity is netral which ranges from 6.5–7.5[39] As mentioned earlier, a pH of 5.5 or lower may result in development of caries lesions. Various studies have evaluated the impact of pH levels on enamel. In vivo studies have shown that the oral cavity has the ability to recuperate once the pH has gone below optimal levels[33] However, the repeated reduction in pH levels is still significant in terms of enamel demineralization.

This study has the following main limitations. Detection of dental caries using diagnostic instrument and radiology was not possible because of lack of instruments and laboratory set up. Therefore, dental caries was identified using clinical diagnosis only.

Conclusion

Dental caries is a common public health problem among primary school children in Surabaya. Toothbrush usage, soda consumption, and educational level of fathers were the associated factors for dental caries. Therefore, health education on oral hygiene, dietary habits and dental visit should be given for children to prevent and control dental caries. Moreover, further studies, including private and rural school children using all methods of diagnosis of dental caries and assessment of knowledge, attitude and practices of children and their parents on oral hygiene should be recommended.

Conflict of interests

The authors stated that no conflict of interest declared.

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Lists of Table

Table 1. Socio-demographic variables associated with caries

Sociodemographic Variables	Dental Caries		COR	p-value
	Negative (%)	Positive (%)		
Age in years				0,820
< 10	22.535	26.291	1	
> 10	24.413	26.761	0.940	
Sex				0.566
Male	23.786	26.699	1	
Female	21.359	28.155	1.174	
Family Financial Status				0.670
Wealth	0.000	0.469	1	
Poor	46.948	52.582	0.373	
Father Education				< 0.0001*
No school	8.920	6.573	1	
Did not pass elementary school	0.000	0.469	4.034	
Graduated from elementary school or equivalent	2.817	5.164	2.379	
Graduated Junior High School / equivalent	1.878	4.225	2.839	
High school graduation / equivalent	11.737	15.023	1.714	
Graduated Higher Education (Diploma. S1. S2. S3)	15.962	17.840	1.501	
There are no adult men in the house	5.634	3.756	0.914	
Mother Education				0.265
No school	6.103	5.634	1	
Did not pass elementary school	0.469	1.408	3.250	
Graduated from elementary school or equivalent	2.347	4.225	1.950	
Graduated Junior High School / equivalent	2.347	6.573	3.033	
High school graduation / equivalent	16.432	18.779	1.238	
Graduated Higher Education (Diploma. S1. S2. S3)	15.493	14.554	1.018	
There are no adult women in the house	3.756	1.878	0.542	

Table 2. Practices to oral hygiene variables associated with caries

Practices to Oral Hygiene Variables	Dental Caries		COR	p-value
	Negative (%)	Positive (%)		
Tootache Frequency				
Often	2.817	2.347	1	
Sometimes	10.798	14.085	1.565	0.855
Rarely	15.962	20.188	1.518	
Never	15.962	15.023	1.129	
Do not know	1.408	1.408	1.200	
Dental Visit				
Once	10.329	10.798	1	
Twice	6.573	7.981	1.161	
Three times	2.347	3.756	1.530	0.566
Four times	2.817	0.469	0.159	
More than four times	2.347	1.878	0.765	
Never been to a dentist for the last 12 months	12.676	17.371	1.311	
Never received dental treatment from a dentist	3.286	2.347	0.683	
Do not know / do not remember	6.573	8.451	1.230	
Dental Visit Caution				
Pain or there are problems with the teeth, gums, or mouth	18.994	14.525	1	0.332
Advanced care or treatment	3.352	3.352	1.308	
Regular tooth control	8.380	10.615	1.656	
Do not know / do not remember	16.760	24.022	1.874	
Toothbrushing Frequency				
Never	0.939	1.408	1	
Several times a month (2-3 times)	6.573	6.103	0.619	0.993
Once a week	0.469	0.469	0.667	
Several times a week (2-6 times)	3.286	4.225	0.857	
Once a day	7.042	7.512	0.711	
Two or more in a day	28.638	33.333	0.776	
Toothbrush User				0.003*
Yes	0.469	0.000	1	
No	46.479	53.052	3.422	
Toothpick User				0.122
Yes	38.498	47.418	1	
No	8.451	5.634	0.541	
Dental Floss User				0.249
Yes	45.540	52.582	1	
No	1.408	0.469	0.289	
Siwak User				0.931
Yes	46.479	52.582	1	
No	0.469	0.469	0.884	
Toothpaste Usage				
Yes	0.939	0.469	1	0.488
No	46.009	52.582	2.286	
Fluoride Usage				
Yes	1.878	5.164	1	0.112
No	15.493	20.657	0.485	
Do not know	29.577	27.230	0.335	

Table 3. Consumption habit variables associated with caries

Consumption Habit Variables	Dental Caries		COR	p-value
	Negative (%)	Positive (%)		
Fruits Consumption Frequency				
Never	2.817	3.756	1	
Several times a month	6.573	7.042	0.804	0.823
Once in a week	8.920	7.512	0.632	
Several times a week	12.676	17.371	1.028	
Every day	8.920	7.981	0.671	
Several times a day	7.042	9.390	1.000	
Honey Consumption Frequency				
Never	15.023	15.962	1	
Several times a month	11.268	12.676	1.059	
Once in a week	6.103	6.103	0.941	0.990
Several times a week	5.634	7.981	1.333	
Every day	4.695	5.164	1.035	
Several times a day	4.225	5.164	1.150	
Gum Consumption Frequency				
Never	17.371	18.310	1	
Several times a month	11.737	10.798	0.873	
Once in a week	4.225	8.451	1.897	0.691
Several times a week	6.103	7.981	1.241	
Every day	4.225	3.756	0.843	
Several times a day	3.286	3.756	1.084	
Candy Consumption Frequency				
Never	8.920	11.268	1	
Several times a month	8.451	9.390	0.880	
Once in a week	6.573	6.573	0.792	0.437
Several times a week	10.798	12.207	0.895	
Every day	8.920	6.103	0.542	
Several times a day	3.286	7.512	1.810	
Milk Consumption Frequency				
Never	2.817	1.408	1	
Several times a month	5.164	6.103	2.364	
Once in a week	4.695	3.756	1.600	0.778
Several times a week	7.981	11.268	2.824	
Every day	18.310	21.127	2.308	
Several times a day	7.981	9.390	2.353	
Soda Consumption Frequency				
Never	27.700	29.577	1	
Several times a month	11.737	10.329	0.827	
Once in a week	2.817	6.103	1.946	< 0.0001*
Several times a week	2.817	2.817	0.937	
Every day	1.408	4.225	2.543	
Several times a day	0.469	0.000	0.312	
Coffee Consumption Frequency				
Never	31.455	35.681	1	
Several times a month	5.634	5.634	0.882	
Once in a week	4.695	2.347	0.441	0.164
Several times a week	2.347	5.634	2.116	
Every day	2.347	1.408	0.529	
Several times a day	0.469	2.347	4.408	
Tea Consumption Frequency				
Never	4.695	5.164	1	
Several times a month	6.103	7.981	1.189	
Once in a week	7.042	5.164	0.667	0.824
Several times a week	11.737	15.962	1.236	
Every day	9.390	11.268	1.091	
Several times a day	7.981	7.512	0.856	
Biscuits Consumption Frequency				
Never	1.878	2.347	1	
Several times a month	2.817	3.756	1.067	
Once in a week	2.817	3.286	0.933	0.822
Several times a week	14.085	11.268	0.640	
Every day	15.962	20.657	1.035	
Several times a day	9.390	11.737	1.000	

Table 4. Decay, missing, and filling distribution by tooth

Tooth Region		Tooth Type	Decay (%)	Missing (%)	Filling (%)	Mean DMF/def	Mean DMF and def
Permanent Tooth	Right Maxilla	Central Incisive	1.16	0.00	0.00		
		Lateral Incisive	1.73	2.86	0.00		
		Canine	2.89	2,86	0.00		
		First Premolar	1.73	14.29	0.00		
		Second Premolar	1.73	0.00	0.00		
		First Molar	10.40	2.86	0.00		
		Second Molar	1.16	0.00	0.00		
		Third Molar	0.00	0.00	0.00		
	Left Maxilla	Central Incisive	0.58	0.00	0.00		
		Lateral Incisive	2.89	2.86	0.00		
		Canine	3.47	0.00	0.00		
		First Premolar	1.73	11.43	0.00		
		Second Premolar	1.16	8.57	0.00		
		First Molar	12.14	5.71	0.00		
		Second Molar	0.58	0.00	0.00		
		Third Molar	0.00	0.00	0.00		
	Left Mandibula	Central Incisive	0.00	0.00	0.00	1	
		Lateral Incisive	0.58	0.00	0.00		
		Canine	0.58	0.00	0.00		
		First Premolar	0.58	11.43	0.00		
		Second Premolar	3.47	5.71	0.00		
		First Molar	23.12	8.57	16.67		
		Second Molar	0.58	0.00	16.67		
		Third Molar	0.00	0.00	0.00		
	Right Mandibula	Central Incisive	0.00	0.00	0.00		
		Lateral Incisive	0.00	0.00	0.00		
		Canine	1.16	0.00	0.00		2.07
		First Premolar	2.89	17.14	0.00		
		Second Premolar	2.89	0.00	0.00		
		First Molar	19.65	5.71	50.00		
		Second Molar	1.16	0.00	16.67		
		Third Molar	0.00	0.00	0.00		
Primary Teeth	Right Maxilla	Central Incisive	28.63	0.00	0.00		
		Lateral Incisive	0.40	4.35	0.00		
		Canine	1.61	0.00	0.00		
		First Molar	4.84	8.70	0.00		
		Second Molar	7.26	8.70	100.00		
	Left Maxilla	Central Incisive	11.69	0.00	0.00		
		Lateral Incisive	0.40	4.35	0.00		
		Canine	0.40	8.70	0.00		
		First Molar	4.03	8.70	0.00		
		Second Molar	6.05	0.00	0.00	1.08	
	Left Mandibula	Central Incisive	10.89	0.00	0.00		
		Lateral Incisive	0.00	0.00	0.00		
		Canine	0.00	0.00	0.00		
		First Molar	1.61	8.70	0.00		
		Second Molar	6.05	26.09	0.00		
	Right Mandibula	Central Incisive	10.48	4.35	0.00		
		Lateral Incisive	0.00	0.00	0.00		
		Canine	0.00	4.35	0.00		
		First Molar	1.21	4.35	0.00		
		Second Molar	4.44	8.70	0.00		

Table 5. Multivariate analysis using multiple logistic regression

Variables	Dental Caries		COR	AOR	p-value
	Negative (%)	Positive (%)			
Father Education					
No school	8.920	6.573	1	1	
Did not pass elementary school	0.000	0.469	4.034	4.528	
Graduated from elementary school or equivalent	2.817	5.164	2.379	2.803	< 0.0001*
Graduated Junior High School / equivalent	1.878	4.225	2.839	2.926	
High school graduation / equivalent	11.737	15.023	1.714	1.686	
Graduated Higher Education (Diploma, S1, S2, S3)	15.962	17.840	1.501	1.688	
There are no adult men in the house	5.634	3.756	0.914	0.854	
Soda Consumption Frequency					
Never	27.700	29.577	1	1	
Several times a month	11.737	10.329	0.827	0.853	
Once in a week	2.817	6.103	1.946	2.058	< 0.0001*
Several times a week	2.817	2.817	0.937	0.862	
Every day	1.408	4.225	2.543	3.301	
Several times a day	0.469	0.000	0.312	0.298	
Toothbrush User					
Yes	0.469	0.000	1	1	< 0.0001*
No	46.479	53.052	3.422	1.699	