

# Treatment needs and self-perception of oral health among adolescents

*Necessidades de tratamento odontológico e autopercepção da saúde bucal em adolescentes*

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## ABSTRACT

### Objective

*The aim of this study was to investigate the relationship of self-perception in oral health and dental treatment needs.*

### Methods

*This was explored through a cross-sectional study in adolescents between 15 to 19 years old in the State of São Paulo, who lived in cities that were randomly selected for the SB Brazil 2000 study. The 1 824 adolescents were examined, underwent a clinical exam and participated in an interview. The following variables were analyzed: need for restorations in maxillary anterior teeth, endodontic treatment, and tooth extraction. These were used in bivariate analysis by the Chi-square test ( $p < 0.05$ ), and logistic regression analysis to compare oral clinical, self perception and social conditions.*

### Results

*The results as regards oral health self perception, showed that 68% of the adolescents affirmed the need for dental treatment; 64% classified their oral health as "good". Moreover, 32.5% of these adolescents reported the presence of dental or gingival pain in the last 6 months; however, only about 20% expressed the need for dental treatment. Adolescents who needed anterior tooth restoration had worse oral health self-perception.*

### Conclusion

*It was concluded that the need for dental treatment influenced self-perception of oral health, especially with regard to painful symptoms and esthetic appearance of the teeth and gums.*

**Indexing terms:** Adolescent health. Oral health. Perception. Self concept.

## RESUMO

### Objetivo

Verificar a relação da autopercepção da saúde bucal com necessidades de tratamento odontológico.

### Métodos

Foi realizado um estudo transversal em 1 824 adolescentes com idade entre 15 a 19 anos do estado de São Paulo, que residiam em cidades sorteadas no SB Brasil 2000. Além do exame, os pesquisados responderam a uma entrevista. As variáveis de desfecho analisadas foram: necessidades de restaurações em dentes anteriores superiores, necessidades de tratamento endodôntico e necessidade de exodontia em qualquer dente. Para verificar a associação entre cada variável dependente e as demais variáveis foi realizada a análise bivariada, utilizando o teste Qui-quadrado, além da análise de regressão logística.

### Resultados

Os resultados deste estudo mostraram que com relação à autopercepção da saúde bucal, 68% dos adolescentes afirmaram necessitar de tratamento odontológico e em 64% dos casos classificaram a saúde bucal como "boa". Porém, a presença da dor de origem dental ou gengival nos últimos 6 meses foi relatada por 32,5% dos adolescentes, ultrapassando a porcentagem atribuída pelos mesmos à necessidade de tratamento odontológico (cerca de 20%). Adolescentes que tinham necessidade de restauração anterior apresentaram uma pior autopercepção da sua saúde bucal.

### Conclusão

Concluiu-se que os adolescentes que tem necessidades de tratamento odontológicas a percebem principalmente em relação a sintomatologia dolorosa e aparência dos dentes e gengivas. É importante conhecer a percepção do adolescente em relação à necessidade de tratamento odontológico normativa para planejamentos de atenção em saúde bucal.

**Termos de indexação:** Saúde do adolescente. Saúde bucal. Percepção. Auto-imagem.

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## INTRODUCTION

The oral health condition related to the teenage population in Brazil has been little investigated as most population studies conducted in this country are limited to researching samples that include school-age individuals, i.e. up to the age of 12, resulting in lack of information on the oral conditions of 15-19-year-old adolescents<sup>1-2</sup>. However, recent studies have reported high caries experience and gingival problems in adolescents<sup>1,3-4</sup>. Therefore, in addition to quantifying the diseases that affect this age group, it would be important to verify how much they interfere with the perception of everyday life and consequently the quality of life of these individuals, since the characteristic emotional conflicts during this stage of life are recognized.

According to Flores and Drehmer<sup>5</sup>, adolescents are aware that oral health is related to good appearance and they point out the importance of preventing bad breath, therefore, there is a relationship between oral health and socialization. On the other hand, the data from the last national survey pointed out that more than 2.5 million Brazilian adolescents have never been to the dentist<sup>3</sup>, which raises the idea that this population has a critical point of view about health, although their access to dental treatment is restricted.

It is relevant to mention the peculiarities of the adolescent population with respect to their unique attitudes and behavioral characteristics. Within this context, it is noted that this population has distinct needs as opposed to other population groups (children, adults and seniors). In this regard, one of the purposes of the treatment needs established by means of epidemiological oral health surveys is to enable treatment planning for population groups, focused on epidemiological caries diagnosis. Therefore, the use of subjective indicators related to adolescents' perceptions and limitations can contribute to the assessment of their quality of life, and to health education, since the mentioned indicators favor more careful planning directed to this population<sup>6</sup>.

In view of the foregoing, there is clearly a need to explore oral health more broadly and in depth among Brazilian adolescents, with the aim of providing data that can be converted into subsidies for establishing public health policies<sup>2</sup>. Therefore, the aim of the present study was to verify the relationship between the main dental treatment needs and oral health self-perception of this population in the age-range between 15 and 19 years in the State of São Paulo in 2002.

## METHODS

In Brazil, the Survey of Oral Health Conditions of the Brazilian Population<sup>3</sup> began in May 2002 and it was considered the population study with the broadest scope in the area of health conducted in the last few years. Thus, the survey was concluded in October 2003 and the results obtained were disclosed by the Ministry of Health in 2004<sup>3</sup>. As a result of the study, the Secretary of Health of the State of São Paulo organized the data collection of a broader sample with the idea that it would be representative of the State<sup>7</sup>.

In the present study, the results were extracted from the sample obtained in the State of São Paulo. Therefore, the data collection and examinations were performed by approaching people in their own homes. For this purpose, the blocks to be surveyed and the number of people per age who would be examined were drawn by lottery.

The number of individuals in the age-range from 15 to 19 years selected to participate in the research was calculated according to past caries experience by means of the DMFT mean and standard deviation, obtained in the last National Survey that examined this age group, conducted by the Ministry of Health in 1986<sup>7-8</sup>.

The criteria to assess caries experience used in the mentioned survey were in accordance with the World Health Organization recommendations<sup>9</sup>. To define the need for dental treatment, the criteria proposed by the national survey of oral health was used<sup>10</sup>. The participants of the survey were also interviewed at the time of the clinical exams, and answered questions related to their socio-economic conditions and self-perception.

The calibration process of the team with a maximum of 5 examiners was performed by the municipality and involved at least 24 hours of work. During the calibration stage, intra- and inter-examiner agreement was 99.0% (95% CI between 98.1 and 99.5) and 98.9% (95% CI between 98.0 and 99.4), respectively. During data collection stage, intra-examiner agreement was above 95%.

The clinical conditions considered dependent variables in the study were: need for maxillary anterior restorations, endodontic treatment of any tooth and extraction of any tooth.

For the comparison between the clinical conditions chosen and the possible related factors, the variables obtained in the interview were selected. The choice was based on the aspects related to the sociodemographic conditions; economic conditions; access to dental services; and self-perception of oral conditions of the individual.

Initially, a descriptive statistical analysis was performed, obtaining absolute distribution, percentage, mean, median, standard deviations, and minimum and

maximum of each variable analyzed. The variables were then dichotomized according to the median or by the mean values found for the population of the State of São Paulo that year. To verify the association between each variable studied and the dependent variables a bivariate analysis was conducted using the Chi-square test.

After this, a logistic regression analysis was performed for each one of the previously defined dependent variables. All the variables included in the regression model showed  $p < 0.250$  in the bivariate analysis. A level of significance of  $p < 0.05$  was adopted. For the statistical analysis, the statistical program SPSS version 12.0 was used.

The parents or guardians of all adolescents under the age of 18 signed a term of free and informed consent, allowing them to participate in the research, and participants over the age of 18, signed the term themselves. As the research involved human beings, the project was submitted for evaluation by the Research Ethics Committee of the School of Dentistry of Piracicaba of the State University of Campinas and received approval (Protocol No. 029/2003) to use the data of the epidemiological survey.

## RESULTS

### Sample characteristics

In the present study, 1,824 adolescents in the age-range between 15 and 19 years were examined. The mean age was 16.7 years of age (SD=1.5). Of those examined, 59.2% (n=1,079) were women; 29.9% (n=546) were classified as non-whites (Afro-Brazilians, mulattos, yellows and indigenous); 23.7% (n=432) lived in places without fluoridated water.

With regard to the sociodemographic aspects, 52.7% (n=779) of the people lived with their families with more than 4 people (division based on the mean number of people per home, according to data of the IBGE, 2000); 39.2% (n=715) had 8 years of education or less; and 24.1% (n=439) had no schooling.

With respect to the socio-economic level, 15.1% (n=276) lived in a rented home while 10.1% (n=184) lived in homes ceded to them, and 57.6% (n=1,050) of the families owned an automobile.

### Clinical conditions of the general sample

Of the total of those examined, 9.5% (n=174) were caries-free and the mean of healthy teeth was 22.2 (SD=4.5).

The DMFT was 6.5 (SD=4.7) with the components distributed as follows: 21.7% of decayed teeth (mean=1.42, SD=2.24), 8.1% of missing teeth (mean=0.53, SD=1.42) and 70.2% of filled teeth (mean=4.6, SD=4.18).

With regard to the needs for dental treatment considered in this research, it was observed that only a small percentage of adolescents had any of the conditions studied. Therefore, only 10.7% (n=195) needed restorations in the maxillary anterior teeth; 6.3% (n=114) needed endodontic treatment; 6.4% (n=117) needed extractions.

### Self-perception of oral health

Self-perception of oral health of the adolescents was measured by seven questions and the distribution of answers is shown in Table 1. According to the results shown in that table, it may be observed that the majority of the people examined (68.0%) considered they needed some type of dental treatment at present. Of the interviewees, 18.4% considered that the appearance of the teeth and gingiva affected their relationship with other people. Another relevant point found in the data collected was the prevalence of adolescents who stated feeling pain in the mouth in the last 6 months (32.5%).

### Relationship between treatment need, sociodemographic and socio-economic conditions and self-perception

Table 2 shows the association, found by means of the bivariate analysis, between clinical variables related to dental needs, sociodemographic and socio-economic variables and perception of oral health. In this table, considering the bivariate analysis between the need for restorations in anterior teeth and the sociodemographic and socio-economic variables and self-perception, it was observed that female adolescents who did not go to school and individuals with up to 8 years of education were more likely to need restorations in anterior teeth. In view of this, all the negative responses to the seven questions that addressed self-perception were related to people in need of restorative treatment in anterior teeth. When the bivariate analysis was performed between the variable endodontic treatment need for any tooth and the other variables, a greater need could be perceived for endodontic treatment associated with the following population characteristics: non-white people, not studying; with up to 8 years of education; living in homes with more than 4 people; who did not own an automobile or a house. With regard to self-perception, only the variables related to mastication and speech did not show any relationship with a greater need for endodontic treatment. When comparisons were made between the need for extractions and sociodemographic and socio-economic variables and self-perception, it was found that gender, race and number of people living in the residence showed no differences among the groups. As regards self-perception, only the classification of speech was not related to a greater need for extractions.

After adjustment of the variables for performing the multivariate analyses for each of the outcomes (need for normative treatment) and the other variables, it was found that self-perception of oral health remained significant in the three models. The adolescents who were in need of anterior restorations rated their oral health and their speech as fair or poor and perceived pain in the teeth or gingiva, irrespective of other variables ( $p < 0.05$ ). With regard to the normative need for endodontic treatment, the perception of the need for treatment and pain were associated ( $p < 0.05$ ). Among those who needed extractions, the prevalence was higher than those who had rated their oral health as being fair or poor (OR = 1.99), and those who perceived the need for treatment (OR = 2.15). The results for each of the models are shown in Table 3.

Table 1. Distribution of answers to the questions about self-perception of oral health in the general sample of adolescents.

Self-perception	n	%
Do you think you currently need treatment? (n=1824)		
No	584	32.0
Yes	1240	68.0
How would you classify your oral health? (n=1783)		
Good	1102	61.8
Fair or poor	681	38.2
How would you classify the appearance of your teeth and gingiva (n=1790)		
Good	1162	64.9
Fair or poor	628	35.1
How would you classify your mastication? (n=1799)		
Good	1382	76.8
Fair or poor	417	23.2
How would you classify your speech because of the condition of your teeth and gums? (n=1790)		
Good	1503	84.0
Fair or poor	287	16.0
Does the appearance of your teeth and gingiva affect your relationship with other people? (n=1722)		
No, it does not	1406	81.6
Yes, it does	316	18.4
How much toothache and pain in gingiva have you felt in the last 6 months? (n=1685)		
No pain	1137	67.5
Little, moderate or a lot of pain	548	32.5

Table 2. Clinical conditions (dependent variables) regarding the socio-demographic, economic and self-perception factors of oral conditions in adolescents. State of São Paulo.

Dependent variables  Independent		Maxillary anterior resbration			Endodontic treatment need			Extractions treatment need		
		n (%)	OR crude (CI 95%)	p	n (%)	OR crude (CI 95%)	p	n (%)	OR crude (CI 95%)	p
<i>Sociodemographic</i>										
Sex n (%)	Female	94 (126)	0.71 (053-0.96)	0.017	55 (74)	0.72 (049-1.06)	0.060	54 (72)	0.79 (054-1.16)	0.134
	Male	101 (94)								
Race	White	132 (103)	1.13 (082-1.56)	0.246	69 (54)	1.57 (106-2.32)	0.016	79 (62)	1.14 (076-1.70)	0.300
	Non white	63 (115)								
Student	Yes	116 (84)	2.40 (176-3.27)	<0.001	75 (54)	1.70 (114-2.55)	0.008	64 (46)	1.83 (194-4.15)	<0.001
	No	79 (180)								
Schooling	9 or + years	90 (82)	1.89 (140-2.56)	<0.001	55 (50)	1.66 (114-2.44)	0.006	55 (50)	1.76 (120-2.57)	0.002
	Up to 8 years	104 (145)								
Nº of people who lived at home	Up to 4	101 (97)	1.28 (095-1.72)	0.061	46 (44)	2.07 (140-3.05)	<0.001	63 (60)	1.16 (079-1.69)	0.250
	5 or +	94 (121)								
<i>Economic</i>										
Carn (%)	Have	73 (94)	1.26 (093-1.71)	0.078	28 (36)	2.37 (153-3.68)	<0.001	26 (34)	2.73 (175-4.27)	<0.001
	Not have	122 (116)								
Housen (%)	Owner	134 (101)	1.20 (080-1.80)	0.214	67 (51)	2.02 (127-3.23)	0.003	64 (48)	1.96 (121-3.17)	0.006
	Rent	33 (120)								
<i>Self perception of oral health</i>										
Do you think you currenteed treatment?	No	43 (74)	1.75 (123-2.50)	0.001	13 (22)	3.90 (217-7.00)	<0.001	15 (26)	3.40 (196-5.90)	<0.001
	Yes	152 (123)								
How you classify your oral health?	Good	62 (56)	3.84 (279-5.30)	<0.001	48 (44)	2.23 (1.51-3.30)	<0.001	39 (35)	3.22 (216-4.82)	<0.001
	Fair or poor	127 (186)								
How you classify your teeth appearance?	Good	74 (64)	3.30 (241-4.49)	<0.001	59 (51)	1.65 (112-2.43)	0.008	51 (44)	2.30 (156-3.39)	<0.001
	Fair or poor	115 (183)								
How you classify your mastication?	Good	105 (76)	3.20 (235-4.37)	<0.001	80 (58)	1.40 (092-2.13)	0.076	70 (51)	2.21 (149-3.28)	<0.001
	Fair or poor	87 (209)								
How you classify your speech?	Good	126 (84)	3.13 (224-4.37)	<0.001	93 (62)	1.08 (065-1.79)	0.432	89 (59)	1.38 (086-2.23)	0.115
	Fair or poor	64 (223)								

Note: The percentage values are referent to the complementary values of the dependent variables, i.e. absence of the condition investigated (without need for maxillary anterior restoration, no need for endodontic treatment, and no need for tooth extractions).



**Table 3.** Factors associated with each of the dependent variables tested (need for maxillary anterior restoration, maxillary anterior prosthetic rehabilitation, endodontic treatment in any tooth, and tooth extraction) in adolescents. São Paulo, Brazil.

	OR Adjusted	95% CI		p
Anterior restoration				
Gender (women)	0.62	0.43	0.90	0.011
Education (up to 8 years of studies)	1.61	1.11	2.33	0.012
Student (no)	1.71	1.16	2.55	0.070
How they classify oral health (poor or regular)	2.15	1.37	3.37	0.001
How they classify speech (poor or regular)	1.82	1.17	2.85	0.008
How much toothache and pain in gingiva they felt in the last 6 months? (little, moderate or a lot of pain)	1.73	1.16	2.59	0.007
Endodontics				
Ethnicity (non-whites)	1.68	1.05	2.70	0.031
Number of people in residence (more than 4)	2.57	1.60	4.15	<0.001
Automobile ownership (no)	2.51	1.44	4.33	0.001
Consider current need for treatment? (no)	3.18	1.60	6.34	0.001
How much toothache and pain in gingiva they felt in the last 6 months? (little, moderate or a lot of pain)	2.18	1.37	3.49	0.001
Extraction				
Student (no)	2.41	1.46	3.98	0.001
Automobile ownership (no)	2.79	1.54	5.05	0.001
Consider current need for treatment? (no)	2.15	1.09	4.25	0.027
How they classify oral health (poor or regular)	1.99	1.19	3.32	0.009

## DISCUSSION

The knowledge of the individual's perception of the need for normative dental treatment is relevant to oral health care planning as regards decisions about the allocation of resources. Studies have shown the need to verify treatment needs considering the subjective and psychosocial aspects of individuals, so that this may lead to the understanding of adherence to dental treatment and health behaviors<sup>11</sup>. This study sought to better understand self-perception in relation to the treatment needs of adolescents in the State of São Paulo taking into account the sociodemographic factors.

Adolescence is considered a transitional stage in human development (between childhood and adulthood) in which the individual goes through physical, psychological and social changes. Therefore, the word "adolescent" is defined as the stage in human development that is characterized by the rite of passage into adulthood that starts after puberty. However, in accordance with the Brazilian legislation<sup>1</sup>, the "adolescent" is an individual aged between 12 and 18 years and the World Health Organization (WHO) recognizes adolescents as individuals aged between 10 and 19 years of age.<sup>9</sup> Bearing in mind that this study was conducted based on the Oral Health Survey of the State of São Paulo<sup>7</sup>, the term "adolescent" cited in the text refers to those aged between 15 and 19 years and it was this age group that was analyzed.

In Brazil, it has been found that the DMFT value increases significantly between late childhood (12-year-olds) and late adolescence (19-year-olds)<sup>7</sup> with an increase of 156% in the magnitude of the disease. On the one hand, this information indicates the inability of preventive measures to impede the occurrence and increase in the disease, and on the other, the need for programs in this area to include adolescents among the population groups that should be prioritized.

The first national epidemiological survey on oral health conducted in 1986, examined adolescents between the ages of 15 and 19 years and found a mean DMFT of 12.4 in the Southeast region<sup>8</sup>. In this study, the mean DMFT in adolescents (15-19 years) was 6.43<sup>7</sup>. This shows a reduction of approximately 50% of caries over these 16 years.

With further reference to dental caries, the data published by the Ministry of Health showed that although the average rate of dental caries has decreased approximately 50% over the past 20 years, the value assigned to the missing tooth component underwent minimal change, and continues to be a factor causing concern about the oral health of adolescents<sup>3,8</sup>. In this context, caries has been considered the main cause of tooth losses in this population<sup>12-14</sup>. Thus, in the present study a relatively satisfactory condition related to caries could be observed, since 70.2% of DMFT was composed of the component restorations, 21.7% of decayed teeth and 8.1% of missing teeth (DMFT of 6.5). In spite of this, only 9.5% of those examined were caries-free at the time of examination.

In the present study it was observed that only a small percentage of adolescents reported the need for restorations in the anterior and maxillary teeth (esthetics), endodontic treatment and extractions. Despite the small percentage found, it was found there are still treatment needs to be met to improve the quality of life of these young people. These data are in agreement with those of another study conducted in the state of São Paulo,<sup>15</sup> in which the authors assessed the treatment needs of adolescents by means of the DMFT. In this study, the authors concluded that although the increase in restored component demonstrated that the need for caries treatment is possibly being met, there are still needs that have not been fully met<sup>15</sup>.

In another study by the same authors<sup>16</sup>, it was found that most treatment needs are of low complexity, such as fillings involving only one surface. However, the authors argued that the most concerning aspect was that

there are levels of dental caries activity and severity that occur much earlier than the cavity stage, thus establishing the real treatment needs, and frequently these are not considered in epidemiological oral health surveys. Once caries disease is detected early, preventive measures of disease control would prevent it from developing and there would be no need for more complex treatments, such as those observed in the present study. In this case it was observed that 10.7% (n=195) of adolescents needed restorations in the maxillary anterior teeth, 6.3% (n=114) needed endodontic treatment and 6.4% (n=117) needed extractions. This reflects a total of 426 individuals (24% of the total of adolescents assessed) in this sample alone, who needed specialized treatment.

In this study, it was noted that 68.0% of the adolescents examined considered that they needed some type of dental treatment at present, 18.4% of respondents reported that the appearance of their teeth and gingiva affected their relationship with others, and 32.5% stated they felt some kind of pain in the mouth over the past months (Table 1). Weyant et al.<sup>17</sup> conducted a study that assessed the self-perception of adolescents, the perception of the parents of these adolescents as regards their oral health, and the real dental need perceived by the dentist. These authors found that 25.6% of adolescents were aware that they needed some type of treatment, and found a significant association between treatment needs and pain symptoms. Whereas the parents' perception of the need for treatment of their adolescent children was shown to be related to esthetics. Both parents and adolescents perceived the need to treat carious teeth with cavities and non-restored teeth. According to this study, from the normative aspect of treatment, only 10.7% were in need of some type of restoration in the maxillary anterior teeth; 6.3% were in need of endodontic treatment, and 6.4% needed extractions. From the point of view of adolescents, 68% considered that they needed some type of treatment, 32.5% reported that they felt some pain. Perception of the need for treatment was higher than the real needs found.

Elias et al.<sup>18</sup> verified the importance attached to oral health by adolescents from different social strata in Ribeirão Preto, by conducting a qualitative research, and found that the factors that most motivated adolescents to seek oral health care were personal appearance, sexuality, employment, and health in general. These factors are related to esthetics and are in agreement with the data presented in Table 2 in which all the answers to the questions about self-perception were negative in individuals who needed restorative treatment in the maxillary anterior teeth

(esthetics). Appearance is highly related to self-esteem and the ability to relate to others, which is of great importance for this age group. Moreover, treatment needs in maxillary anterior teeth are more visible and more easily perceived, because those who rated their oral health as fair or poor had about two times more chances of needing restorations in anterior teeth, which did not occur in cases that needed endodontic treatment and extraction.

Nicholas et al.<sup>19</sup> found that the highest rates of oral disease were associated with the worst economic conditions among Brazilian adolescents. Peres et al.<sup>20</sup> investigated the influence of the family socio-economic trajectory from childhood to adolescence observing the associated patterns of caries and behavioral factors, and concluded that poverty negatively influenced caries experience, the care index and use of dental services. Data shown in Table 2 is in agreement with the above-mentioned studies because a relationship was observed between the socio-economic and demographic factors and higher caries experience, which reflects greater need for treatment. Adolescents who needed endodontic treatment had the following socio-economic and demographic characteristics: they lived with more than four people in the same household, did not own an automobile, were not students, and had less than eight years of education. The profile of those who had higher treatment need for extraction did not own an automobile and did not go to school; and with regard to the need for restorations in anterior teeth the characteristics were: they did not go to school, had less than 08 years of education and were women.

Okullo et al.<sup>21</sup> conducted a survey with high school students with a mean age of 15.8 years and found that those whose parents had higher educational levels were more satisfied with their oral health condition, while students with a poorer socio-economic status were the most dissatisfied with their oral health. In the present study, adolescents who considered their oral health poor, were those who had more treatment needs, particularly restorative treatment in the maxillary anterior region (Table 3), as discussed above, the influence of socioeconomic factors on oral health conditions was observed.

Ostberg et al.<sup>22</sup> in their study with students from 13-18 years of age found that female adolescents who perceived their oral health condition as better and had less gingival bleeding than the men, but the women were less satisfied with the appearance of their teeth. The present study showed similarities with the findings of the previous authors, and the women presented fewer needs for restorative treatment in the maxillary anterior teeth than

men, according to Table 3. However, women had a more negative oral health perception and greater concern about esthetics than men. Furthermore, among the women in this study, those who were not students and had up to 08 years of education were more likely to need restorations in anterior and maxillary teeth.

In the regression analysis (Table 3), the fact that the young people analyzed were not students or had little education was associated with the need for maxillary anterior restorations. The need for endodontic treatment was correlated with the condition of living with more than 4 people in the same household and not owning automobiles. The need for extractions was connected with the fact that the individual was not a student and the family did not own an automobile. That is to say, that education and income were shown to have an influence on the health-disease process.

According to Frias et al.<sup>4</sup>, the better the socio-economic conditions, the more favorable will be the health service access and the behaviors in relation to promote health. In the study of the above-mentioned authors, the fact that the adolescent was a student was identified as a protective factor, whether the school was public or private. From this aspect, it is suggested that health policies directed towards adolescents focus on the promotion of education, in order to discourage them from abandoning their studies and prevent their early entry into the labor market, while respecting the principles of equity.

The subject of self-perception was approached through the questions used in epidemiological survey of the state of São Paulo in 2002<sup>7</sup>, although there were limitations because the questions were prepared to meet the objectives of the mentioned study. Questions of a qualitative nature could be recommended for further studies that explore self-perception. However, as this sample was representative of the state of São Paulo, and considering the difficulties of epidemiological surveys that address the subjective aspects related to oral health in this age group, this study is of great importance.

Compared with previous epidemiological surveys, a decline in caries experience, in addition to a low percentage of treatment needs was observed in

adolescents. It is pointed out that these needs are related to social, economic and demographic factors, and attention is drawn to the need to invest in oral health promotion and access to dental services for this age group.

## CONCLUSION

The adolescents in the State of São Paulo with dental needs showed a perception of oral health particularly with regard to pain symptoms and the appearance of teeth and gingiva. According to this study, it was concluded that it is important to know the oral health status of adolescents; the profile of those who have treatment needs, and to incorporate the data on self-perception, in order to plan health care directed to this age group with the purpose of achieving universality, which guarantees everyone the right to health, and equity that diminishes the social inequities.

## Collaborators

MJ BATISTA participated in the organization of the research, interpretation of data, preparation of the discussion, and writing of the article. LB RIHS participated in the organization of the research, significantly contributed to the analysis and interpretation of data, prepared the description of the methodology, and participated in the writing of the article. CS GONÇALO participated in the organization of the research, prepared the bibliographic review, and participated in the writing of the introduction and the article. FM MIYAUCHI-KUBO participated in the organization of the research, critical interpretation of the results, preparation of the discussion, and writing of the article. RC AMARAL participated in the organization of the research, initial analysis of the data, preparation of the discussion, and writing of the article. MLR SOUSA participated in the conception and planning, interpretation of data, critical review of the article, and writing of the article.

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