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Original Article

## Access to Dental Services and Related Factors in Adolescents from Vitória, Espírito Santo, Brazil, 2011

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### Abstract

**Objective:** To characterize access of adolescents to dental services and identify its determinants. **Material and Methods:** This is a cross-sectional, population-based study conducted with a representative sample of 431 adolescents aged 15–19 years in a health district of Vitória, ES. The interviews were guided by a structured questionnaire with socio-demographic questions, service utilization, and self-perceived oral health. SPSS statistical software version 15.0 was used. Statistical analysis consisted of the use of simple frequency with proportion and chi-square tests. Significance level of 5% was adopted. **Results:** Most respondents visit the dentist at least once a year, having as main reason routine visit, are attended in public services and positively evaluate the service provided. Factors associated with greater access to dental services (consultation once a year) were care in private service ( $p = 0.000$ ), schooling ( $p = 0.019$ ) and positive self-perceived oral health ( $p = 0.047$ ). **Conclusion:** It was concluded that the prevalence of recent use of dental services among adolescents was high and access was related to service profile, self-perceived oral health and schooling.

**Keywords:** Health Services Accessibility; Dental Offices; Health Knowledge; Attitudes; Practice; Adolescent.

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## Introduction

Adolescence is a period of life that starts at puberty and ends when the young individual reaches what culturally is considered adulthood, with social maturity and / or economic independence [1].

There is a growing concern among researchers about aspects related to the health of adolescents and to the establishment of measures aimed at obtaining and maintaining acceptable health conditions, including oral health [2].

Despite the recognized importance of oral health to the quality of life of individuals, this important segment of the Brazilian population still do not use dental services frequently [3]. The approach in this age group is essential because adolescents search for physical-psycho-social balance and therefore are somewhat careless with their oral health [4].

Access to health care services and therefore to oral health services is a right recognized by the Constitution [5] of 1988 and guaranteed by the universality principle of the Unified Health System (SUS). Access is presented as one of the elements of health systems, among those linked to the organization of services, regarding the access to the health service and continuity of treatment, including access to services and subsequent care [6].

Knowing and identifying the conditions of access of individuals to health services is of paramount importance, as this will contribute to the planning of actions and adequacy of dental services within the social reality of localities under study [7]. In addition, analyzing the use of dental services is essential to evaluate the effective reach of universal health care access.

This paper assumes that three characteristics should be considered to explain differences in the use of health services: predisposition, facilitation and need [6]. Predisposition includes socio-demographic variables (age, sex, marital status, family size, ethnicity and educational level) and individual attitudes and opinions (values in relation to health and knowledge about diseases) [6]. Facilitation includes variables that facilitate the use of these services such as family income, presence of health insurance and regular access to dental care services [6]. Need is related to the need of using health services, individual's health perception or the disease diagnosis by health professionals [6]. This theoretical model shows how these factors affect the use and access to health services.

Therefore, the aim of this study was to characterize the access of adolescents to dental care services and identify factors related to access, including the relationship with self-perceived oral health.

## Material and Methods

This is a cross-sectional, population-based study conducted with a representative sample of adolescents aged 15-19 years living in 18 neighborhoods served by the Family Health Strategy (FHS), Health Region of Maruípe, Vitoria, ES. This city has a high FHS coverage rate and is divided into 6 administrative regions and 27 Health Territories, and the Administrative Region of Maruípe has 100% FHS coverage, with 23 health teams divided into 6 health territories.

The Family Health Units included in the study were: Luiz Cláudio Passos (Andorinhas), Thomaz Tommasi (Bonfim), Maria Rangel dos Santos (Consolação), Dr. Gilson Santos (Bairro da Penha), Benedito Gomes da Silva (Santa Marta), and Michel Minassa (Maruípe). These services cover a heterogeneous population in social and economic terms, co-existing areas with a predominance of middle-class population and slum regions of high social vulnerability, which is the reason that this region was chosen for the field work.

Data obtained in this study were produced within the survey "Behavior patterns related to the health of adolescents living in the region of Maruípe, Vitória, Espírito Santo", which aimed to assess the behavior pattern, knowledge and health needs of adolescents aged 15-19 years in order to develop prevention and care strategies directed to this population.

This research plan was part of activities included in the Education Program for Health Work - PET-Family Health - and was developed by dentistry, medicine, pharmacy and nursing students, professors at the Federal University of Espírito Santo and FHS professionals participating in the project that belong to the service network of the Municipal Department of Health of Vitória.

In order to calculate the sample size, the total of adolescents living in the region was obtained by means of consolidated information produced by health teams and included in the Primary Care Information System (SIAB). This information system, due to its dynamic production of information concerning the population attended by health teams, provides data with a higher degree of correspondence to the reality of the health territory when compared to other information systems [8], making it an important source of information on territories whose population is constantly under major demographic changes, as is the case of large urban centers.

Thus, 3,367 adolescents living in the region of Maruípe were identified. The sample size was estimated based on the percentage of adolescents aged 15-19 years who never visited a dentist in southeastern Brazil, which is 10.1% according to the 2003 SB Brazil Project [9]. Considering bilateral error of 3%, confidence interval of 95% and an estimated non-response of 20%, the final sample size was calculated in 464 adolescents. Adolescents proportionally distributed by health territory with a simple random selection of adolescents from a list of families with adolescents living in the territories produced by health teams based on the SIAB.

A structured questionnaire with closed questions addressing socio-demographic variables (age, sex, marital status, educational level, family size), self-perceived oral health and access to dental services was used. This questionnaire was developed and used in the 2003 SB Brazil Project [9].

A pilot study was conducted with 59 adolescents from six health units in July 2010. Based on observations from interviews, some questions of the questionnaire were changed, which basically consisted of grammatical changes in order to improve the understanding of questions without changing their meaning, as well as standardization of language and technique of interviewers.

The data collection period was from November 2010 to April 2011, being held by students involved in the project with the help from community health workers, who were responsible for identifying the address of adolescents and follow the interviewers during visits to the homes of

adolescents to be interviewed. Interviewers were trained to carry out interviews and participated in the pilot study and questionnaire validation.

All information was encoded and anonymously stored in a database created for this purpose. SPSS statistical software version 15.0 was used. An independent researcher reviewed 10% of data stored in the database to ensure the reliability of information. Statistical analysis consisted of the use of simple frequency with proportion for qualitative variables and in the use of chi-square tests of association between categorical variables. Significance level of 5% was adopted.

This project was approved by the Ethics Research Committee of the Federal University of Espírito Santo (CEP No. 038/10). Health workers invited adolescents at their homes and asked written permission from parents so that they could participate in the project. Parents were invited to attend the health facility to clarify any questions or for further explanation. All adolescents selected were invited to participate in the study on a voluntary basis. Those who agreed to participate signed the informed consent form after receiving written information about the project. There is no conflict of interest involved in the project.

## Results

Overall, 431 adolescents selected in the sampling process agreed to participate. The response rate was 92.9%. The distribution of adolescents was homogeneous in the following aspects: house made of masonry (96.5%), sewage system (92.8%) and public garbage collection (98.6%).

The numerical and percentage distribution of sociodemographic characteristics of adolescents is described in Table 1. Table 2 shows data on access to dental services of this group. As for the type of care, 51.5% of adolescents reported being attended in public service. Of the five (1.2%) adolescents who reported never having been to the dentist, four are male, all students, four of them are in high school.

**Table 1. Socio-demographic characteristics of adolescents aged 15-19 years living in the region of Maruípe, Vitória, Brazil 2011.**

Variables	n	%
<b>Age</b>		
15 years	91	21.1
16 years	95	22.0
17 years	89	20.6
18 years	80	18.6
19 years	76	17.7
<b>Sex</b>		
Male	172	39.9
Female	259	60.1
<b>Marital status</b>		
Single	401	93.0
Married	10	2.3
Stable union	18	4.3
Widowed	1	0.2
No response	1	0.2
<b>Number of individuals living in the same home</b>		
1 to 2	28	6.5

3 to 5	315	73.2
6 to 10	83	19.2
More than 10	4	0.9
No response	1	0.2
<b>Educational status</b>		
Studies	286	66.4
Works	22	5.1
Unemployed	11	2.5
Studies and works	54	12.5
Does not study and does not work	58	13.5
<b>Total</b>	<b>431</b>	<b>100.0</b>

**Table 2. Access to dental services among adolescents aged 15-19 years living in the region of Maruípe, Vitoria, ES, Brazil 2011.**

Variables	n	%
<b>Visits the dentist at least once a year?</b>		
Yes	320	74.3
No	96	22.2
No response	15	3.5
<b>Time since the last visit</b>		
Never been to the dentist	5	1.2
Less than 1 year	291	67.5
From 1 to 2 years	81	18.8
3 years or more	49	11.3
No response	5	1.2
<b>Place of care</b>		
Never been to the dentist	5	1.2
Public service - HU	170	39.4
Public service - other HU	33	7.7
Public service - university	9	2.1
Public service - others	10	2.3
Private service - dental office	170	39.5
Supplementary private service	27	6.3
Philanthropic service	1	0.2
No Information	6	1.3
<b>Reason</b>		
Never been to the dentist	5	1.2
Routine visit / maintenance	290	67.3
Pain	56	13.0
Gingival bleeding	4	0.9
Cavity in teeth	22	5.1
Injuries, lumps and spots in the mouth	1	0.2
Others	41	9.5
Pain + Gingival bleeding	1	0.2
No Information	11	2.6
<b>Care assessment</b>		
Never been to the dentist	5	1.2
Terrible	5	1.2
Bad	2	0.5
Regular	35	8.1
Good	251	58.2
Great	119	27.6
No Information	14	3.2
<b>Total</b>	<b>431</b>	<b>100.0</b>

Dental access and sociodemographic variables were associated. The frequency of adolescents who reported having been to the dentist in the last 12 months was significantly higher among females (62.1%) than among males (37.9%); however, no statistically significant difference was observed ( $p = 0.066$ ). The only statistically significant difference was found between educational status and frequency of once a year ( $p = 0.019$ ), which have a direct relationship with each other.

Table 3 shows the access data distributed according to the place of care (public or private). Data on self-perception and visit to the dentist once a year are described in Table 4.

**Table 3. Characteristics of dental access by place of care (public or private) among adolescents aged 15-19 years living in the region of Maruípe, Vitoria, ES, Brazil 2011.**

Variables			Service		p-value
			Public	Private	
Time since the last visit:	Less than 1 year	n	131	159	0.000
		%	59.0%	80.7%	
	From 1 to 2 years	n	58	23	
		%	26.1%	11.7%	
	3 years or more	n	33	15	
		%	14.9%	7.6%	
Reason	Total*	n	222	197	**
		%	100.0%	100.0%	
	Routine visit / maintenance	n	138	151	
		%	63.6%	77.0%	
	Pain	n	40	16	
		%	18.4%	8.2%	
	Gingival bleeding	n	3	1	
		%	1.4%	0.5%	
	Cavity in teeth	n	14	7	
		%	6.5%	3.6%	
	Injuries, lumps and spots in the mouth	n	1	0	
		%	0.5%	0.0%	
	Others	n	20	21	
		%	9.2%	10.7%	
	Pain + Gingival bleeding	n	1	0	
		%	.5%	0.0%	
	Total*	n	217	196	
		%	100.0%	100.0%	
Care assessment:	Terrible / Bad	n	6	1	0.004
		%	2.8%	0.5%	
	Regular	n	26	9	
		%	12.0%	4.7%	
	Good / Great	n	185	182	
		%	85.3%	94.8%	
	Total*	n	217	192	
		%	100.0%	100.0%	

\*Frequencies with "no information" were excluded; \*\*Association was not held due to the frequency values.

**Table 4. Association between visits to the dentist at least once a year, and self-perceived oral health in adolescents aged 15-19 years living in the region of Maruípe, Vitória, ES, Brazil 2011.**

Variables		Visit the dentist at least once a year?		p-value
		Yes	No	
How do you perceive your health	Great / Good	n	243	61
		%	75.9%	63.5%
	Regular	n	68	29
		%	21.3%	30.2%
	Bad / Terrible	n	9	6
		%	2.8%	6.3%
	Total*	n	320	96
		%	100.0%	100.0%

\*Frequencies with "no information" were excluded.

## Discussion

The present study assessed adolescents aged 15-19 years living in a region of Vitória assisted by the FHS in relation to access to dental services. The rate of participation in the study can be considered high, similar to other studies that obtained almost 100.0% of response of female adolescents [1].

The sociodemographic characteristics of adolescents included in the study reflect the characteristics of adolescents assisted by the FHS in Maruípe, health region of Vitória, which consists of lower middle and lower-class neighborhoods.

This study showed that the prevalence of recent use of dental services by adolescents was high, corroborating the findings of studies conducted in Southern [10,11] and Southeastern Brazil [3]. The hypotheses that explain this result would be the high coverage of the Family Health Strategy in the region (100% coverage) and the positive perception of adolescents in relation to their oral health.

Moreover, the findings indicated that only 1.2% of adolescents reported never having been to the dentist. The national epidemiological oral health study - SB Brazil project 12- carried out in 2010 showed that about 5.0% of adolescents aged 15-19 years had never been to the dentist in the Southeastern macro-region, which percentage is much lower than the national distribution of 13.6%. In studies carried out with adolescents from Pelotas, RS, 9.9% of adolescents reported never having been to the dentist [11].

Regarding the reason for visiting the dentist, 13.0% of adolescents sought dental service due to pain and 67.3% for routine and / or maintenance, confirming the results found in other studies [13]. In Brazil, according to the 2010 SB Brazil project, the main reasons for seeking dental health services were treatment (37.3%) and maintenance (36.2%) [12]. The findings described above may reflect the oral health status of adolescents in the city of Vitória, in which the DMFT found in the year 2010 was 2.67 [12], considered low by WHO. In this study, dental care evaluation was considered satisfactory and similar to national data, since they were proportionally equal [12].



Another relevant fact is the access distribution as to the place of care, whether public or private. In this study, it was observed that a considerable percentage of adolescents (45.7%) reported having access to private dental services. In the 2008 National Household Survey, 69.4% of respondents had access to private dental services [14].

Important results shown in Table 3 deserve attention: 1. positive association between recent visit and place of private care, revealing the need to encourage and ensure regular visits to public dental services for conducting regular routine visits so that individuals do not seek the dentist only when a dental problem was already installed; 2. positive association between unsatisfactory dental service and public place of care, being understood that in addition to the discussion of universal access to public dental services, it is necessary to ensure the quality of services to achieve its effectiveness [15].

In this sense, the high rates of access of adolescents to private dental services can be understood from some factors such as: significant presence of private market in dentistry, despite the expansion of public services observed in recent years [16,17]; increased purchasing power of the population in general and in particular among young people, who for this reason turns out to have better access to private dental services when compared to the elderly population [14,18]; oral health actions of public services are focused on risk groups (ex .: children) or programmed actions, in addition to possible difference in the set of services provided by public and private institutions [19], which may mean fewer possibilities to meet the needs of the population, particularly in emergency situations [17]; and, as mentioned above, a worse evaluation of public services by the general population.

In this study, the frequency of recent visit was higher in women than in men, which is a relevant result, even with no statistically significant difference. In addition, most adolescents who have never been to the dentist are male.

In a study with adolescents aged 14-18 years, visits were also more frequent among women (89%) than among men (81%) [20]. According to the National Policy for Integral Attention to Men's Health, published in 2008, in our society, "care" is a role considered to be female and women are educated from an early age to play and take responsibility for this role. In addition, men have difficulty recognizing their needs, cultivating the magical thinking that rejects the possibility of becoming ill. In addition, studies have shown that the main reason for a group not to seek dental service is the lack of perception of their need [21].

On the other hand, as seen in data from Table 4, the positive self-perceived oral health had a positive association in relation to the search for dental services once a year. This direct association between self-perceived oral health and dental visits has been observed in other studies [10], that is, adolescents and adults with better self-perceived oral health visited the dentist more frequently than those with bad or very bad self-perceived oral health.

Other factors such as the variable schooling can influence the use of such services [8]. A study carried out in Minas Gerais showed that higher educated individuals visited the dentist ten

times more than those of low education [18]. This study showed that adolescents who study tend to consult the dentist once a year, a fact that may be related to the “Sorria Vitória” Program, held in the public schools of Vitória. This program, created in 1995, includes collective-educational and preventive activities aimed at children and adolescents, regardless of the risk of caries.

This study had some limitations. One would be the possible occurrence of recall errors, since adolescents were asked about information for a period of 12 months preceding the survey. Another limitation would be the possible influence that interviewers unintentionally had on the responses of respondents, since they presented themselves as students of the health field.

## Conclusion

The findings described in this work revealed satisfactory data on access to dental services of adolescents living in the study area, since the prevalence of recent use of dental services was high and access was related to the service profile, self-perceived oral health and educational level.

In addition, this study showed that access is related to important variables such as service profile, self-perceived oral health and educational level. Therefore, the determinants for access to dental services identified in this work included factors that facilitate the use of dental services (service profile); attitudes and opinions of individuals associated with their perceived need (self-perceived oral health); and socio-demographic variables (educational level).

Thus, this work shows access determinants that should be considered in the planning and programming of local health actions.

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