

DENTAL SPECIALTIES CENTER: FROM THE CHARACTERIZATION TO THE ASSOCIATION OF MODULATING FACTORS OF USERS' HEALTH

CENTRO DE ESPECIALIDADES DENTALES: DE LA CARACTERIZACIÓN A LA ASOCIACIÓN DE FACTORES DE MODULACIÓN DE LA SALUD DEL USUARIO

CENTRO DE ESPECIALIDADES ODONTOLÓGICAS: DA CARACTERIZAÇÃO À ASSOCIAÇÃO DOS FATORES MODULADORES DE SAÚDE DE USUÁRIOS

Davide Carlos Joaquim¹
Leticia Pereira Felipe²
Arthur Castro de Lima³
Karina Gonzaga da Costa⁴
Mohamed Saido Balde⁵
Leilane Barbosa de Sousa⁶
Ana Caroline Rocha de Melo Leite⁷

¹Universidade Federal do Ceará (UFC). Fortaleza, Ceará – Brasil. Orcid: <https://orcid.org/0000-0003-0245-3110>

²Universidade da Integração Internacional da Lusofonia Afro-Brasileira – (UNILAB). Redenção, Ceará – Brasil. Orcid: <https://orcid.org/0000-0003-2551-9143>

³Universidade da Integração Internacional da Lusofonia Afro-Brasileira – (UNILAB). Redenção, Ceará – Brasil. Orcid: <https://orcid.org/0000-0003-1826-2247>

⁴Universidade da Integração Internacional da Lusofonia Afro-Brasileira – (UNILAB). Redenção, Ceará – Brasil. Orcid: <https://orcid.org/0000-0002-4127-0424>

⁵Universidade da Integração Internacional da Lusofonia Afro-Brasileira – (UNILAB). Redenção, Ceará – Brasil.

⁶Universidade da Integração Internacional da Lusofonia Afro-Brasileira – (UNILAB). Redenção, Ceará – Brasil. Orcid: <https://orcid.org/0000-0003-0266-6255>

⁷Universidade da Integração Internacional da Lusofonia Afro-Brasileira – (UNILAB). Redenção, Ceará – Brasil. Orcid: <https://orcid.org/0000-0002-9007-7970>

Autor correspondente

Ana Caroline Rocha de Melo Leite
Universidade da Integração Internacional da Lusofonia Afro-Brasileira – UNILAB, Campus das Auroras – Rua José Franco de Oliveira, s/n CEP – 62.790-970 - Redenção, Ceará – Brasil. E-mail – acarolmelo@unilab.edu.br. Telefone: +55 (85) 99168-0679.

ABSTRACT

Introduction: Social and economic aspects and oral health behaviors trigger oral diseases with systemic repercussions. **Objective:** This study aimed to characterize and associate sociodemographic and economic aspects and self-perception, habits, and behavior in the oral health of users of the Dental Specialties Center (DSC) of a municipality in Ceará. **Method:** This is a cross-sectional analytical observational study with a quantitative approach, conducted in 2019, with patients seen at the Regional DSC of Baturité – CE. After consent, we completed a questionnaire, drafted based on the literature and validated. **Results:** Of the 388 participants, 63.14% had an income of up to one minimum wage, 54.64% had good self-perception of oral health, and 61.08% brushed at least 3 times a day. An association was observed between being a patient over the age of 40 and using toothpaste, toothbrush, and other means of hygiene and having a good self-perception of oral health, brushing teeth more than twice a day, and having sought dental care 6 months earlier. **Conclusion:** Despite the unfavorable demographic and economic profile, the population studied showed good self-perception and adequate oral health behaviors. In addition, their socioeconomic aspects and self-perception, habits, and oral health behaviors were related to each other.

Keywords: Oral Health. Health Behavior. Oral Hygiene. Dental Health Services.

RESUMEN

Introducción: Los aspectos sociales, económicos y los comportamientos de salud bucal pueden desencadenar enfermedades bucodentales con repercusiones sistémicas. **Objetivo:** Caracterizar y asociar aspectos sociodemográficos, económicos y autopercepción, hábitos y comportamientos en salud bucal de usuarios del Centro de Especialidades Odontológicas de un municipio de Ceará. **Metodología:** Estudio observacional analítico transversal con abordaje cuantitativo, realizado en 2019, con pacientes atendidos en la Dirección General Regional de Baturité - CE. Después del consentimiento, se completó un cuestionario, basado en la literatura y validado. **Resultados:** De los 388 participantes, el 63,14% tenía ingresos de hasta un salario mínimo, el 54,64% tenía una buena autopercepción de salud bucal y el 61,08% se cepillaba al menos 3 veces al día. Hubo asociación entre ser un paciente mayor de 40 años y usar dentífrico, cepillo de dientes y otros medios de higiene y tener una buena autopercepción de salud bucal, cepillarse los dientes más de 2 veces al día y haber buscado atención odontológica durante 6 meses. **Conclusión:** La población estudiada, a pesar del perfil demográfico y económico desfavorable, presentó una buena autopercepción y comportamientos de salud bucal adecuados. Aún así, sus aspectos socioeconómicos y su autopercepción, hábitos y comportamientos en salud bucal se relacionaron entre sí.

Palabras clave: Salud Bucal. Comportamientos Relacionados con la Salud. Higiene Bucal. Servicios de Salud Bucal.

RESUMO

Introdução: Aspectos sociais e econômicos e comportamentos em saúde bucal podem desencadear doenças orais com repercussão sistêmica. **Objetivo:** Caracterizar e associar os aspectos sociodemográficos e econômicos e a autopercepção, hábitos e comportamentos em saúde bucal dos usuários do Centro de Especialidades Odontológicas de um município cearense. **Metodologia:** Estudo observacional analítico transversal e de abordagem quantitativa, realizado em 2019, com pacientes atendidos no CEO Regional de Baturité – CE. Após consentimento, foi preenchido um questionário, construído com base na literatura e validado. **Resultados:** Dos 388 participantes, 63,14% tinham renda de até um salário mínimo, 54,64% tinham boa autopercepção da saúde bucal e 61,08% realizavam a escovação pelo menos 3 x por dia. Observou-se associação entre ser paciente com idade acima de 40 anos e utilizar dentífrico, escova dental e outros meios de higienização e ter boa autopercepção da saúde bucal, escovar os dentes mais de 2 x por dia e ter buscado atendimento odontológico há 6 meses. **Conclusão:** A população estudada, apesar do perfil demográfico e econômico desfavorável, apresentou uma boa autopercepção e comportamentos adequados em saúde oral. Ainda, seus aspectos socioeconômicos e a sua autopercepção, hábitos e comportamentos em saúde bucal se relacionaram entre si. **Palavras-chave:** Saúde Bucal. Comportamentos Relacionados com a Saúde. Higiene Bucal. Serviços de Saúde Bucal.

INTRODUCTION

The concept of health accompanied the evolution of humankind and society, reflecting the social, political, religious and cultural conditions of each time⁽¹⁾. From this perspective, it is accepted that health derives from the performance of exogenous and endogenous factors, represented, especially, by social and environmental aspects, health behavior, and lifestyle⁽²⁾.

In the context of oral health, especially regarding dental caries disease, a condition associated with pain, suffering and impairment of organic functions, whose complications involve local, systemic, psychological, social and economic effects⁽³⁾, theories related to its etiopathogenesis involve since the main contribution of the microorganism (biological agent) up to individual and collective experiences and the ecosystem approach. In organicist models (Microbial Theory), carious lesion results from the action of genetic and environmental factors, such as bacterial flora, eating habits, dental structure, time, salivary flow and composition, and oral hygiene⁽⁴⁾.

In social models, caries results from the action of individual biological factors and social determinants, represented by social, economic, cultural, behavioral and ethnic factors. For ecosystem models, carious lesion results from the interaction of the individual with the environment, involving since the interrelationship between the general and particular conditions of the social structure and the individual conditions

up to the interdependence of people and their links to biological, historical, physical and social contexts⁽³⁾.

Despite the diversity of these theories, it is thought that the emergence and development of the carious process derives from the action of determining factors and modulating or confounding factors. The former induce the demineralization of the dental structure, with subsequent cavitation and destruction, represented by the microbiota, susceptible host, cariogenic diet, time and saliva. As for modulating factors, which are related to determining factors, we can mention knowledge, behavior, oral hygiene, attitudes and income, among others⁽⁴⁾.

In terms of strategies to combat caries, the emergence of the National Oral Health Policy in 2004 and its subsequent restructuring allowed the increase of the offer of public dental services, specialized or not, to the population. Thus, the Dental Specialties Centers (DSC) were established, aiming to increase access to dental services of medium complexity, offering specialties such as diagnosis, periodontics, endodontics, surgery, and special needs care.

Given the theories that seek to explain caries disease, the importance it takes on in the global scenario and the policies instituted for its combat, it is necessary to know the different factors that influence the oral health of patients assisted in the DSCs, in order to enable a greater understanding of the action of these factors among the population already assisted by services

focused on oral health and, consequently, adequately plan policies and programs aimed at the maintenance, prevention and restoration of health.

Based on the above, this study aimed to characterize and associate the sociodemographic and economic aspects and the self-perception, habits and behaviors in oral health of DSC patients in a municipality of Ceará.

METHODS

This is a cross-sectional analytical observational study with a quantitative approach, conducted with patients of DSC Dr. José Marcelo de Holanda (Regional DSC of Baturité), located in the municipality of Baturité – CE, from August to September 2019.

$$n = (Z_{\alpha/2} \cdot \sqrt{p \cdot q} / E)^2$$

In which:

n = Sample size

Z_{α} = Confidence coefficient

p = prevalence

q = (1 – p)

E = Sampling error

In view of the non-feasibility in establishing prevalence, we adopted a prevalence (p) of 50% (0.5) and the complement of the sample proportion (q) of 50% (0.5). The sampling error was 5% (0.05) and the degree of confidence was 95% (1.96). Thus, the sample should have 384.16 (\approx 385) patients.

Data collection began by presenting the project to DSC patients who were waiting for care on the days and times when the study team

Were included in the study patients treated in all specialties offered by the Regional DSC of Baturité, represented by endodontics, dental prosthesis, bucomaxillofacial surgery, orthodontics, periodontics, and special needs. Patients under 18 years of age unaccompanied by their legal guardian were excluded from the study, since, in this situation, it was not possible to obtain the signature of the Informed Consent Form.

To determine the sample size, we used as a basis the number of patients treated in 2018, in all the clinics of this institution, which corresponded to 15,212. Thus, to describe the population estimate, the following formula was used to calculate the sample – infinite population (n > 10,000):

was present. After accepting the invitation and signing the Informed Consent Form, the participants completed a questionnaire, constructed based on models found in the literature on Knowledge, Attitudes and Practices on Sexually Transmitted Infections (STIs)⁽⁵⁾ and condoms⁽⁶⁾ and validated by four nurse judges and three dental judges, containing multiple-choice and essay questions regarding sociodemographic and economic aspects and self-

perception, habits (means used in oral hygiene, frequency and time of tooth and tongue hygiene) and oral health behaviors (time of replacement of toothbrush and access to public and/or private dental service and periodicity).

The data were tabulated in the software Excel for Windows, version 2010, and analyzed by the software Epi Info, version 7.2.1.0. Categorical variables were expressed as absolute and relative frequency and, for the association between them, we used the Chi-square Test or Fisher's Exact Test. A significance level of 5% was admitted ($P < 0.05$).

The research project was approved by the Research Ethics Committee of the University for International Integration of the Afro-Brazilian Lusophony (UNILAB), according to CAAE

14383119.8.0000.5576 and Opinion N. 3.402.383, issued on June 19, 2019. The ethical precepts of research involving human beings were followed.

RESULTS

Of the 388 participants, 77.32% ($n = 300$) were female, 38.91% ($n = 151$) were 35 years of age or older and 66.49% ($n = 285$) declared themselves brown. Regarding marital status, 38.65% ($n = 150$) of the patients were married or in a stable union and, regarding schooling, 30.41% ($n = 118$) had completed high school. On monthly family income, 63.14% ($n = 245$) of the surveyed had an income of up to one minimum wage. Regarding housing, 50.26% ($n = 195$) of the participants lived in the rural area (Table 1).

Table 1 – Sociodemographic and economic aspects of patients, Baturité Massif, CE, 2019

Variables	N	%
Age		
< 25 years old	146	37.63
25-29 years old	46	11.85
30-34 years old	45	11.59
≥ 35 years old	151	38.91
Sex		
Female	300	77.32
Male	86	22.16
Other	2	0.52
Color or ethnicity		
White	65	16.75
Black	35	9.02
Yellow	11	2.83
Brown	258	66.49

Undeclared	19	4.89
Marital status		
Single with eventual partnership	113	29.12
Single with fixed partnership	106	27.31
Married or in consensual union	150	38.65
Divorced	13	3.35
Widowed	6	1.55
Schooling		
Incomplete Elementary School	49	12.63
Complete Elementary School	42	10.82
Incomplete High School	59	15.21
Complete High School	118	30.41
Incomplete Higher Education	66	17.01
Complete Higher Education	39	10.05
Postgraduate studies	15	3.86
Income^a		
≤ 1 minimum wage	245	63.14
Between 1 and 2 minimum wages	64	16.49
Between 2 and 3 minimum wages	39	10.05
Between 3 and 5 minimum wages	14	3.61
Between 5 and 10 minimum wages	2	0.51
No family income	24	6.18
Residence		
Urban area	193	49.74
Rural area	195	50.26

Source: Own elaboration.

^aMinimum wage – R\$ 998,00.

Concerning self-perception of oral health, 54.64% (n = 212) of the participants considered it good. Regarding the frequency and times of toothbrushing, 61.08% (n = 237) and 92.01% (n = 357) of patients reported brushing at least 3 times a day and upon waking, respectively. Among the means used in oral hygiene, 56.44% (n = 219) of the participants used toothbrush and toothpaste and, about the time of toothbrush replacement, 31.96% (n = 124) of the participants performed it every 3 months. Regarding tongue hygiene, 95.87% (n = 372) of the patients stated that they clean it. About access to dental services,

58.76% (n = 228) of the surveyed reported using public health care and 85.31% (n = 331) sought dental care 6 months earlier (Table 2).

Table 2 – Self-perception, habits and behaviors in oral health of patients, Baturité Massif, CE, 2019

Variable	N	%
Self-perception of oral health		
Great	73	18.81
Good	212	54.64
Regular	97	25.00
Bad	6	1.55
Toothbrushing frequency		
1 time a day	8	2.06
2 times a day	88	22.68
3 times a day	237	61.08
4 or more times a day	55	14.18
Brushing times^a		
Upon waking	357	92.01
After breakfast	59	15.21
After lunch	299	77.06
After dinner	95	24.48
Before bed	323	83.25
Means used in toothbrushing		
Toothbrush and toothpaste	219	56.44
Toothbrush, toothpaste and floss	126	32.48
Toothbrush, toothpaste and mouthwash	43	11.08
Frequency of replacement of toothbrush		
Every month	88	22.68
Every 2 months	96	24.74
Every 3 months	124	31.96
Every 6 months	44	11.34
When bristling is worn	36	9.27
Tongue hygiene		
Yes	372	95.87
No	16	4.12
Access to dental services		
Public	228	58.76
Private	2	0.51
Public and private	158	40.72
Last visit to the dentist		
6 months ago	331	85.31
≥1 year	57	14.69

Source: Own elaboration.

^aPossibility of more than one answer.

When we evaluate the association between age, oral hygiene means and the time of the last visit to the dentist, a significant relationship was

observed between being a participant over 40 years of age and using toothpaste, toothbrush and other means ($p = 0.036$), as well as being a

participant aged less than or equal to 40 years, brushing teeth more than twice a day ($p = 0.004$) and having sought dental care 6 months earlier ($p = 0.012$). For the relationship between marital status, oral hygiene and tongue brushing, there

was a significant association between being a non-single participant and using toothpaste, toothbrush and other means ($p = 0.003$) and being single and not having the habit of brushing the tongue ($p = 0.003$) (Table 3).

Table 3 – Association between socioeconomic and demographic aspects and oral health behavior of patients, Baturité Massif, CE, 2019

Variables	Means of oral hygiene n (%)		Brushing frequency n (%)		Tongue hygiene n (%)		Last visit to the dentist n (%)		P value*
	DE ^a	DEO ^b	≤ 2x	>2x	Yes	No	6 months	≥ 1 year	
Age									
≤ 40 years	155	134	61	228 ²	280	9	254 ³	35	P<0.05
	53.63	46.37	21.11	18.89	96.89	3.11	87.89	12.11	
> 40 years	64	35 ¹	35	64	92	7	77	22	P<0.05
	64.65	35.35	35.35	64.65	92.03	7.07	77.78	22.22	
Marital status									
Single	110	109	47	172	214	5	192	27	P<0.05
	50.23	49.77	21.46	78.54	97.72	2.28	87.67	12.33	
Not single	109	60 ⁴	49	120	158	11 ⁵	139	30	P<0.05
	64.50	35.50	28.99	71.01	93.49	6.51	82.25	17.75	
Schooling									
Up to CES ^c	66	25 ⁶	35	56	89	2	73	18	P<0.05
	72.53	27.47	38.46	61.54	97.80	2.20	80.22	19.78	
Beyond CES ^c	153	144	61	236 ⁷	283	14	258	39	P<0.05
	51.52	48.48	20.54	79.46	95.29	4.71	86.87	13.13	
Income									
≤ 1 MW ^d	153 ⁸	92	70	175 ⁹	235	10	210	35	P<0.05
	62.45	37.55	28.57	71.43	95.92	4.08	85.71	14.29	
> 1 MW ^d	66	77	26	117	137	6	121	22	P<0.05
	46.15	53.85	18.18	81.82	95.80	4.20	84.62	15.38	

Source: Own elaboration.

^aDE – toothpaste and toothbrush; ^bDEO – toothpaste, toothbrush and others (dental floss and mouthwash); ^cCES – Complete Elementary School; ^dMW – Minimum Wage. *Fisher's exact test; ¹P = 0.036; ²P = 0.004; ³P = 0.012; ⁴P = 0.003; ⁵P = 0.003; ⁶P = 0.000; ⁷P = 0.000; ⁸P = 0.001; ⁹P = 0.014.

Regarding the association between schooling, oral hygiene and toothbrushing frequency, there was a significant relation between being a participant with an education level lower than or equal to complete Elementary School and using toothpaste, toothbrush and

other means ($p = 0.000$), as well as having an education level beyond complete Elementary School and brushing teeth more than twice a day ($p = 0.000$). Regarding income, means of oral hygiene and the frequency of toothbrushing, there was a significant relation between being a participant with an income of less than or equal to

1 minimum wage, using toothpaste and toothbrush ($p = 0.001$) and brushing teeth more than twice a day ($p = 0.014$).

Evaluating the association between oral health perception, toothbrushing frequency and the time of the last visit to the dentist, a significant relation was found between being a participant with good perception, brushing teeth more than twice a day ($p = 0.032$) and having sought dental care 6 months earlier ($p = 0.000$).

For the relation between the time of the last visit to the dentist, means of oral hygiene and toothbrushing frequency, a significant association was observed between being a participant who sought dental care at least 1 year earlier and using toothpaste, toothbrush and other means ($p = 0.003$), as well as having sought dental care 6 months earlier and brushing teeth more than twice a day ($p = 0.001$) (Table 4).

Table 4 – Association between oral health perception, the time of the last visit to the dentist and the oral health behavior of patients, Baturité Massif, CE, 2019

Variables	Means of oral hygiene n (%)		Brushing frequency n (%)		Last visit to the dentist n (%)		P value*
	DE ^a	DEO ^b	≤ 2x	>2x	6 months	≥1 year	
Good self-perception of oral health							
Yes	155 54.39	130 45.61	63 22.11	222 ¹ 77.89	254 ² 89.12	31 10.88	P<0.05
No	64 62.14	39 37.86	33 32.04	70 67.96	77 74.76	26 25.24	
Last visit to the dentist							
6 months	177 53.47	154 46.53	72 21.75	259 ⁴ 78.25	--	--	P<0.05
≥ 1 year	42 73.68	15 ³ 26.32	24 42.11	33 57.89	--	--	

Source: Own elaboration.

^aDE – toothpaste and toothbrush; ^bDEO – toothpaste, toothbrush and others (floss and mouthwash). *Fisher's exact test; ¹P = 0.032; ²P = 0.000; ³P = 0.003; ⁴P = 0.001.

DISCUSSION

Through the development of this research, it was possible to understand, in addition to the socioeconomic and demographic profile and aspects related to self-perception, habits and oral health behaviors of patients assisted in the

Regional DSC of Baturité, the connections between these factors, which may contribute to the adoption of health promotion measures more directed to this public.

Evaluating the profile of the participants, the study showed a predominance of women, a

result that corroborated Rosendo et al.⁽⁷⁾, who reported, in a study conducted in a DSC of a municipality in the state of Paraíba, a greater participation of women. This finding reinforces the greater demand of the female population for health services⁽⁸⁾.

As for the greater number of participants aged 35 years or older, data which resembled that of Rosendo et al.⁽⁷⁾, it may suggest that these individuals are more affected by oral diseases and/or greater demand for specialized dental services. In particular, the assumption of higher occurrence of oral disorders in this public may be linked to the action of infectious agents, presence of traumas and adoption of certain habits and lifestyle, in addition to the possibility of deriving from manifestations of systemic diseases⁽⁹⁾.

Regarding the predominance of self-reported brown people, a result supported by the literature⁽⁸⁾, it may be related to the significant miscegenation that occurred in the Brazilian population⁽¹⁰⁾. About marital status, the highest number of patients married or in a common-law marriage, a phenomenon also observed by Bordin et al.⁽¹¹⁾, may result from the high number of adults and elderly people included in this research. Regarding schooling, the preponderance of participants with complete high school was a relevant finding, since the literature indicates that the education level of a population is directly associated with quality and knowledge in relation to oral health⁽¹²⁾.

Regarding the significant number of participants who reported having a family income

lower than or equal to one minimum wage, which reinforces Carreiro et al.⁽¹³⁾, it can be understood if we analyze the data of the Government of the State of Ceará⁽¹⁴⁾ and the Brazilian Institute of Geography and Statistics (IBGE)⁽¹⁵⁾. According to these institutions, 86.56% of households in the Baturité Region and 49.6% of the population of the municipality of Baturité have an income of up to one or half minimum wage, respectively. Concerning residence, the fact that more than half of the participants live in the rural area is in accordance with the information presented by the Institute of Research and Economic Strategy of Ceará (IPECE)⁽¹⁶⁾, which indicate a greater presence of inhabitants in this area of the Massif.

Regarding self-perception of oral health, a condition that can be determined by the action of biological factors and social determinants, the positive evaluation by a significant percentage of the studied population may result from their adequate attitudes towards the health of the oral cavity, such as the frequency of toothbrushing, tongue hygiene and time since seeking dental care. It is also possible that this self-perception is linked to masticatory function, self-image and the absence of experience of pain and discomfort, as reported by Santos et al.⁽¹⁷⁾.

Evaluating the frequency of toothbrushing, its accomplishment at least 3 times a day by a large number of patients, particularly those aged less than or equal to 40 years, is consistent with the literature, which states that dental hygiene should be performed after each meal, as a strategy to reduce biofilm and dental calculus⁽¹⁸⁾.

For the relationship between the education level and the frequency of toothbrushing, the fact that patients who have a higher education level than complete elementary school brush their teeth more than twice a day can be understood if it is assumed that the higher schooling implies greater access to information and, consequently, greater knowledge and access to health services⁽¹²⁾.

Concerning the association between being a participant with an income of less than or equal to 1 minimum wage and brushing teeth at least 3 times a day, this piece of data was unexpected, since a higher socioeconomic status is linked not only to a more effective dental hygiene and use of more auxiliary means during that hygiene⁽¹⁹⁾, but also to more frequent toothbrushing.

Regarding toothbrushing times, the habit of brushing upon waking, as reported by most patients, can be explained by the occurrence of morning halitosis. However, it is worth mentioning that it is mainly recommended brushing after breakfast and before bedtime⁽²⁰⁾.

As for the means used in oral hygiene, the use of toothbrush and toothpaste by more than half of the participants, a result similar to Thapa et al.⁽²¹⁾, although it is in line with the dictated recommendations, may result from the lack of access to information and/or higher cost associated with flossing and mouthwash. In particular, these justifications can be conceived based on the fact that patients in this study with an income of less than or equal to 1 minimum wage used only toothpaste and toothbrush in the hygiene of the oral cavity.

Despite this result, the use of toothbrush, toothpaste and auxiliary means of oral hygiene was observed among participants over 40 years of age, a result that corroborates Roberto et al.⁽²²⁾ and that may be linked to an awareness regarding the development of oral pathologies and their possible prevention by the use of these devices.

Specifically, for the association between being a non-single participant and using toothpaste, toothbrush and other means of oral hygiene, this finding can be explained by the influence that the figure of the partner exerts on self-care⁽²³⁾. In addition, if we consider that the non-single individual constitutes a family, the responsibility they take on over the oral health of their children, in addition to being a model of behavior and health habits⁽²⁴⁾, may justify the use of appropriate means of oral hygiene for the prevention of oral diseases. However, research conducted by Najafi et al.⁽¹⁹⁾ indicated higher DMFT indices among divorced and widowed individuals, which may result from the non-use or inappropriate use of means of oral hygiene.

Regarding the significant relationship between being a participant with an education level lower than or equal to complete elementary school and using toothpaste, toothbrush and other means of oral hygiene, this result was surprising, since the level of schooling has been directly proportional to positive oral hygiene habits^(19,21).

For the low number of the population studied that replaced toothbrushes every 3 months, this result is worrisome, since the American Dental Association (ADA) advises that

this practice should occur every 3 or 4 months or earlier, when the bristles are worn⁽²⁵⁾.

Regarding the sanitization of the tongue, most participants had this habit. This finding reinforces the importance that the practice of tongue hygiene exerts on the reduction of biofilm and prevention of halitosis⁽²⁶⁾. About the association between being a single patient and not having the habit of brushing the tongue, it may be linked to a lower commitment of this individual to oral health, particularly if assumed that they do not have the role of father or mother. We can also suppose, as an influencing factor in this relationship, the lack of information on the part of these individuals⁽²⁷⁾.

On access to dental services, the significant number of participants who reported using the public health system can be easily explained based on the low socioeconomic level presented by the population included here. Regarding the high number of participants who sought dental care 6 months earlier, especially those aged less than or equal to 40 years, this finding was unexpected if we consider that adults and the elderly, in general, seek the dentist due to the presence of pain⁽²⁸⁾.

Concerning the relation between having sought dental care 6 months earlier and toothbrushing at a frequency greater than twice a day, this finding highlights the importance of the dentist as an agent that educates, informs and enables the dissemination of knowledge, inducing the patient to perform appropriate self-care practices⁽²⁹⁾. Although the search for dental care

at least 1 year earlier was associated with the use of toothpaste, toothbrush and other means of oral hygiene by patients, this result highlights the importance of the dentist in conducting measures aimed at maintaining, preventing and restoring oral health.

Regarding the relation between good perception of oral health, toothbrushing at a frequency of more than twice a day and search for dental care 6 months earlier by participants, this finding highlights the influence of appropriate oral health habits and behaviors on the positive self-assessment of this type of health. If it is considered that a greater number of teeth present in the oral cavity results from satisfactory oral health-related attitudes and practices, it is possible to better understand the influence of these factors in determining a positive perception of oral condition⁽³⁰⁾.

Based on these findings, services, actions, programs and policies that interfere with determinant and modulating health factors can be instituted in order to raise awareness among individuals and the community about the influence of these factors in disease prevention and maintenance and restoration of oral and systemic health. This awareness should extend to the role that every citizen, professional and manager assumes in the face of this challenge.

CONCLUSION

Based on the results obtained, we can conclude that the population studied, despite the unfavorable demographic and economic profile,

presented a good self-perception and adequate oral health behaviors. Furthermore, the age of the participants and self-perception in oral health were associated with oral health behaviors, as well as marital status, educational level, income and the search for dental care were related to oral health habits.

REFERENCES

1. Santos PSL, Freitas ACP. A moradia como fator de promoção do direito à saúde de moradores das margens dos Igarapés na cidade de Manaus. *Planeta Amaz Rev Int Direito Ambient e Políticas Públicas* [Internet]. 2019 [citado em 2021 jan 23]; 11:13–22. Disponível em: <http://dx.doi.org/10.18468/planetaamazonia.2019n11.p13-22>.
2. Fortunka KB. Factors affecting human health in the modern world. *J Educ Heal Sport* [Internet]. 2020 [citado em 2021 jan 23]; 10(4):75-81. Disponível em: <http://dx.doi.org/10.12775/JEHS.2020.10.04.009>.
3. Costa de MS, Adelário AK, Vasconcelos M, et al. Modelos Explicativos da Cárie Dentária: Do Organicista ao Ecosistêmico. *Pesq Bras Odontoped Clin Integr, João Pessoa* [Internet]. 2012 abril-junio [citado em 2021 jun 24]; 12(2): 285-291. Disponível em: <https://www.redalyc.org/pdf/637/63723490021.pdf>.
4. Fejerskov O, Manji F. Risk assessment in dental caries. In: Bader JD *Risk Assessment in dentistry* [Internet]. Chapel Hill: University of NorthCarilona Dental Ecology; 1990 [citado em 2021 jun 24]. P. 215-217.
5. Ceará G do E do. Plano de desenvolvimento integrado do turismo sustentável polo Maciço de Baturité - Tomo I. Fortaleza; 2014 [citado em 2021 jun 24]. Disponíveis em: <https://www.setur.ce.gov.br/wp-content/uploads/sites/59/2018/09/PDITS-macico-baturite-tomo-I.pdf>.
6. Nicolau AIO, Ribeiro SG, Lessa PRA, et al. Knowledge, attitude and practices regarding condom use among women prisoners: The prevention of STD/HIV in the prison setting. *Rev da Esc Enferm.* [Internet]. 2012 [citado em 2021 jun 24];46(3):711–9. Disponível em: <https://doi.org/10.1590/S0080-62342012000300025>.
7. Rosendo RA, Sousa TM dos S, Júnior OE de S, et al. Grau de satisfação dos usuários de um Centro de Especialidades Odontológicas na Paraíba. *Res Soc Dev.* [Internet]. 2020 [citado em 2021 jun 24];9(8):1–23. Disponível em: <https://doi.org/10.33448/rsd-v9i8.5502>.
8. Guibu IA, de Moraes JC, Junior AAG, et al. Características principais dos usuários dos serviços de atenção primária à saúde no Brasil. *Rev Saude Publica* [Internet]. 2017 [citado em 2021 jun 23];51:1s-13s. Disponível em: <https://doi.org/10.11606/S1518-8787.2017051007070>.
9. Tarquinio SBC, De Oliveira LJC, Peres MA, et al. Fatores associados à prevalência de lesões bucais e à realização do autoexame bucal em adultos jovens de uma coorte de na. *Cad Saude Publica* [Internet]. 2013 jan [citado em 2021 jun 24];29(1):155–64. Disponível em: <https://doi.org/10.1590/S0102-311X2013000100018>.
10. Brito L da C. O crime da miscigenação: a mistura de raças no Brasil escravista e a ameaça à pureza racial nos Estados Unidos pós-abolição. *Rev Bras História* [Internet]. 2016 may-aug [citado em 2021 jun 24];36(72):107–30. Disponível em:



- https://doi.org/10.1590/1806-93472016v36n72_007.
11. Bordin D, Fadel CB, Moimaz SAS, et al. Characterization of the self-perception of oral health in the Brazilian adult population. *Cienc e Saude Coletiva* [Internet]. 2020 aug [citado em 2021 jun 23];25(9):3647–56. Disponível em: <https://doi.org/10.1590/1413-81232020259.29612018>.
 12. Lopes RT, Neves ÉTB, da Costa Dutra L, et al. Socioeconomic status and family functioning influence oral health literacy among adolescents. *Rev Saude Publica* [Internet]. 2020 [cited 2021 Jun 23];54:1–10. Available from: <https://doi.org/10.11606/s1518-8787.2020054001842>.
 13. Carreiro DL, Souza JGS, Coutinho WLM, et al. Uso de serviços odontológicos de forma regular na população de Montes Claros, MG, Brasil. *Cienc e Saude Coletiva* [Internet]. 2017 [citado em 2021 jun 24];22(12):4135–50. Disponível em: <https://doi.org/10.1590/1413-812320172212.04492016>.
 14. Governo do Estado do Ceará. Secretaria de Turismo. Plano de desenvolvimento integrado polo de Maciço de Baturité [Internet]; Governo do Estado do Ceará; 2014. [citado em 2021 jun 24]. Disponível em: <https://www.setur.ce.gov.br/wp-content/uploads/sites/59/2018/09/PDITS-macico-baturite-tomo-II.pdf>.
 15. Brasil. Instituto Brasileiro de Geografia Estatística. Cidades [Internet]. Brasília; 2010. [citado em 2021 jun 24]. Disponível em: <https://censo2010.ibge.gov.br/>.
 16. Governo do Estado do Ceará. Secretaria de Planejamento e Gestão. Perfil das Regiões de Planejamento Maciço de Baturité – 2017 [Internet]. Governo do Estado do Ceará; 2016. [citado em 2021 jun 24]. Disponível em: http://www2.ipece.ce.gov.br/estatistica/perfil_regional/2017/PR_Macico_de_Baturite_2017.pdf.
 17. Santos M, Federal U, Grande R, et al. Self-perception on oral health and its relationship with use of services and prevalence of tooth ache. *Rev Ciência Plur* [Internet]. 2016 [citado em 2021 jun 24];2(2):14–27. Disponível em: <https://periodicos.ufrn.br/rcp/article/view/9470>.
 18. Kim JA, Choi HM, Seo Y, et al. Relations among obesity, family socioeconomic status, oral health behaviors, and dental caries in adolescents: The 2010-2012 Korea National Health and nutrition examination survey. *BMC Oral Health* [Internet]. 2018 [cited 2021 Jun 24];18(1):1–7. Available from: <https://doi.org/10.1186/s12903-018-0576-5>
 19. Najafi F, Rezaei S, Hajizadeh M, et al. Decomposing socioeconomic inequality in dental caries in Iran: Cross-sectional results from the PERSIAN cohort study. *Arch Public Heal* [Internet]. 2020 [cited 2021 Jun 28];78(1):1–11. Available from: <https://doi.org/10.1186/s13690-020-00457-4>
 20. Ahmad I, Qadri MM, Niazi M, et al. A survey of oral hygiene practices amongst dental students. *Poj*. [Internet] 2018 [cited 2021 Jun 28];2017(1):50–5. Available from: <https://poj.org.pk/index.php/poj/article/view/159/183>
 21. Thapa P, Aryal KK, Mehata S, et al. Oral hygiene practices and their socio-demographic correlates among Nepalese adult: Evidence from non communicable diseases risk factors STEPS survey Nepal 2013. *BMC Oral Health* [Internet]. 2016 [cited 2021 Jun 28];16(1). Available from: <https://doi.org/10.1186/s12903-016-0294-9>

22. Roberto LL, Noronha DD, Souza TO, et al. Falta de acesso a informações sobre problemas bucais entre adultos: Abordagem baseada no modelo teórico de alfabetização em saúde. *Cienc e Saude Coletiva* [Internet]. 2018 [citado em 2021 jun 28];23(3):823–35. Disponível em: <https://doi.org/10.1590/1413-81232018233.25472015>
23. Trevizani FA, Doreto DT, Lima GS, et al. Atividades de autocuidado, variáveis sociodemográficas, tratamento e sintomas depressivos entre idosos com Diabetes Mellitus. *Rev Bras Enferm* [Internet]. 2019 [citado em 2021 jun 28];72(Suppl 2):27–34. Disponível em: <https://doi.org/10.1590/0034-7167-2017-0579>
24. Zhang Y, Li KY, Lo ECM, et al. Structural equation model for parental influence on children's oral health practice and status. *BMC Oral Health* [Internet]. 2020 [cited 2021 Jun 28];20(1):1–10. Available from: <https://doi.org/10.1186/s12903-020-1048-2>
25. Van Leeuwen MPC, Van der Weijden FA, Slot DE, et al. Toothbrush wear in relation to toothbrushing effectiveness. *Int J Dent Hyg* [Internet]. 2019 [cited 2021 Jun 28];17(1):77–84. Available from: <https://doi.org/10.1111/idh.12370>
26. Santos PS da S, Mariano M, Kallas MS, et al. Impacto da remoção de biofilme lingual em pacientes sob ventilação mecânica. *Rev Bras Ter Intensiva* [Internet]. 2013 [citado em 2021 jun 28];25(1):44–8. Disponível em: <https://doi.org/10.1590/S0103-507X2013000100009>
27. Jager ME, Batista FA, Perrone CM, et al. O adolescente no contexto da saúde pública brasileira: reflexões sobre o PROSAD. *Psicol em Estud* [Internet]. 2014 [citado em 2021 jun 28];19(2):211–21. Disponível em: <https://doi.org/10.1590/1413-737221567004>
28. Lino CM, Batista MJ. Distribuição espacial do uso dos serviços odontológicos por adultos em um município de médio porte do estado de São Paulo. *Arq Odontol, Belo Horizonte* [Internet]. 2020 [citado em 2021 jun 28];6: e22. Disponível em: <https://doi.org/10.7308/aodontol/2020.56.e22>
29. Zerbetto MV, Faleiros PB, De Moraes ABA. Relações entre instruções e comportamentos de autocuidado de pacientes submetidos à exodontia do terceiro molar. *Perspect em Análise do Comport* [Internet]. 2018 [citado em 2021 jun 28];9(1):29–42. Disponível em: <https://doi.org/10.18761/PAC.2017.013>
30. Agostinho ACMG, Campos ML, Silveira JLGC da. Edentulismo, uso de prótese e autopercepção de saúde bucal entre idosos. *Rev Odontol da UNESP* [Internet]. 2015 [citado em 2021 jun 28];44(2):74–9. Disponível em: <https://doi.org/10.1590/1807-2577.1072>.

Submission: 2021-10-28

Approval: 2022-01-21