

Oral Health and Quality of Life: Perceptions of Adolescents Enrolled in a Health Promoting School

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Abstract— *Background*-Oral health is an integral part of general health and constitutes an indicator of quality of life in adolescence. The present study aimed to know the profile and the perception of adolescents of a health promoting school about oral health-related quality of life. *Methods*- Quantitative study of students of a health promoting school in Fortaleza using a questionnaire addressing sociodemographic data, general health and oral health status. The OHIP-14 (Oral Health Impact Profile) questionnaire was also used. *Results*- Participants were 210 adolescents aged between 11 to 19 years, with a mean age of 15.82, $SD \pm 1.269$. The mean OHIP-14 score was statistically associated with: current general health ($p=0.023$); health in the previous year ($p=0.003$), hearing problem ($p=0.004$); use of medication ($p=0.002$) and difficulty in chewing and swallowing food ($p=0.009$). *Conclusion*- The adolescents believe their general health is very good or fair; however, self-perception assessed by the mean OHIP-14 score showed that oral health can influence quality of life. In this context, the Health Promoting School constitutes an important space for the development of political practices and pedagogical strategies through which health priorities and social actions can be truly incorporated into education.

Keywords— *Oral Health; Self Concept; Adolescent; School Health.*

I. INTRODUCTION

Adolescence is a period of life characterized by rapid and intense physical, social and cognitive changes that lead to new ways of thinking and relating and to new roles and responsibilities. Given that, large institutions have pointed to the need for programs and projects to promote the health, well-being and development of adolescents [1].

The World Health Organization (WHO) launched in 1995 the Global School Health Initiative to mobilize and strengthen health promotion and education activities at local, national, regional and global levels. The initiative was guided by the Ottawa Charter (1986) followed by discussions at the Fourth International Conference on Health Promotion (1997) and the recommendations established by the WHO Expert Committee on Health Education (1995). The initiative is intended to improve the health of students, school staff, families and other

community members through Health Promoting Schools [2].

According to WHO [2], school health promotion programs are more effective when guided by major themes and supported by the teacher, who plays an important role in the sustainability of education in school health actions. The teacher acts as a facilitator who will encourage changes in daily life at school to promote adolescents' health.

Adolescence is considered a period of risk for oral problems like caries, gingivitis and periodontal disease [3,4], particularly because oral hygiene is a complex practice [5]. Given that, health promotion in the school context should be entirely focused on three interrelated components: health education; development of life skills; and creation and maintenance of healthy physical and psychosocial environments that provide health services, healthy food and active life [6]. Therefore, health

promotion at schools should recognize oral health as an integral part of general health because a healthy mouth allows the person to speak, eat and socialize without discomfort or embarrassment [7].

A trend study was carried out to evaluate the progression of oral health of Brazilian adolescents over a period of 24 years based on the three national epidemiological surveys conducted in 1986, 2003 and 2010. The study identified a decrease in the prevalence of dental caries at all ages. However, when comparing that reduction to the values recommended by the World Health Organization and the International Dental Federation for the year 2000 [8], only the 12-year-old group reached the target for DMFT in 2003 (average number of decayed, missing and filled teeth divided by the number of people examined). None of the age groups reached the target set for the year 2010, particularly that set for the component "missing teeth". Furthermore, according to the equation used in the study, the target set for DMFT in the 12-year-old group would only be reached in 2029 [9].

In this context, health and social policies must be adapted to and effectively conceived and integrated into the policies, processes and practices of education systems. In short, health must find its cultural anchor point within the education system [10].

Thus, the comprehensive nature of dental care requires integration with other professionals and understanding of life in all its aspects (e.g., physical, social and psychological). However, the assessment of such conditions requires indicators/indices, such as the OHIP (Oral Health Impact Profile), developed by Slade and Spencer (1994), and its short form—the OHIP-14 [11].

Researchers have pointed out that self-reported symptoms, perceived oral health status and need for treatment are relevant measurable dimensions of oral health and quality of life [12]. Therefore, good oral health is imperative to maintaining good general health, well-being and quality of life. In addition, it has a significant positive impact on self-esteem, dignity, social integration, and nutrition in general.

Thus, the aim of the present study was to know the profile and the perception of adolescents enrolled in a Health Promoting School regarding oral health-related quality of life.

II. METHODS

This is a quantitative descriptive cross-sectional study conducted with adolescents enrolled in a Health Promoting School (HPS) located in the city of Fortaleza, Ceará, Northeastern Brazil.

Although Brazil's Statute of the Child and Adolescent (*Estatuto da Criança e do Adolescente – ECA*)

– law No. 8069/90 – considers adolescents to be 12 to 18 years old [13], the present study took into consideration the World Health Organization reference, which establishes that adolescence corresponds to the period between 10 and 19 years of age [14].

The health promoting school in which the research took place carries out educational activities aimed at promoting the health of the whole school community, which includes students, teachers, school staff and family members. The strategies developed at the school are supported by a University.

As a result of this partnership (school and university), three high school students who were junior scientific initiation fellows at the same school were prepared to be disseminators of health notions, particularly those related to oral health. The students underwent training in workshops on the issue.

As disseminators, the students were able to carry out health education actions in order to pass on the knowledge acquired in the training to their peers.

A census of students aged 10-19 years old was conducted in the health promoting school using a questionnaire addressing: a) sociodemographic information (age, gender, skin color, marital status, education, profession and income); b) general health (how do you feel, systemic disease, vision, hearing and speech problems, use of medication, smoking, and drinking); and c) oral health (dry mouth, difficulty chewing and swallowing, problems with the taste of food, burning mouth sensation, pain for no apparent reason, edema). Additionally, the OHIP-14 questionnaire was applied.

The OHIP-14 (Oral Health Impact Profile, short form) questionnaire contains 14 items whose answers are organized with scores ranging from 0 to 4, where: 0. Never; 1. Hardly ever; 2. Occasionally; 3. Fairly often; and 4. Very often. The OHIP-14 aims to assess the impact of oral problems on quality of life based on people's perception of dysfunctions, discomforts and disabilities due to problems in the mouth.

Absolute and relative frequencies were used to describe categorical variables; mean and standard deviation were used for numerical variables. The Shapiro-Wilk test was used to check the normality of data and the Mann-Whitney and Kruskal-Wallis tests were used for comparisons involving two groups or more than two groups, respectively.

The Shapiro-Wilk test was used to check the normality of the OHIP score prior to comparisons. The hypothesis of normality of data was rejected ($p < 0.001$). Thus, nonparametric tests were used for comparisons. All the tests were performed with a significance level of 5%.

Without any conflicts of interest, the research project was approved by the Research Ethics Committee of the University of Fortaleza under Approval No. 745.659/2014. Written consent was obtained from the parents or legal guardians of students.

III. RESULTS

Participants were 210 adolescents aged 11-19 years, with a mean age of 15.82 ± 1.269 . Most participants were aged 15-19 years (181; 86.2), single (181; 86.2), women (140, 66.7%), *pardos* – Portuguese for Mixed-race Brazilians – (90; 42.9), unemployed (200; 95.2), had a household income of two or more minimum wages (111; 52.9) and eleven years of study (88; 41.9). A total of 19 students (9%) reported drinking.

Table 1 shows the oral health characteristics of the participants in relation to the analysis of the mean OHIP-14 score and the sociodemographic condition of the interviewees. There were no statistically significant differences.

Table 2 shows statistically significant associations between the mean OHIP-14 score and general health conditions: current general health ($p=0.023$), health in the previous year ($p=0.003$); hearing problems ($p=0.004$); and use of medication ($p=0.002$).

Table 3 presents the statistical analysis of the mean OHIP-14 score in relation to oral health. Statistically significant association was found for difficulty chewing and swallowing food ($p=0.009$).

IV. DISCUSSION

The Health Promoting School is defined as an educational institution with policies, procedures, activities and a structure that allow the protection and promotion of the health of all members of the community. Thus, an in-depth analysis of the objectives, functions and current operations of the school system is necessary to determine political practices and pedagogical strategies through which health priorities and social actions can be truly incorporated into education. This analysis should take into consideration the various cultural, economic and geographical aspects so that the various education systems and contexts can be understood [10].

It was in this context that we sought to know the perception of adolescents enrolled in a Health Promoting School regarding oral health-related quality of life. The students presented predominant characteristics which are shown in table 1. Most participants are 15-19 years old, single, women, unemployed and enrolled in vocational high school programs.

A total of 19 students (9%) reported drinking. This result shows that the Health Promoting School has

been effective in preventing this deleterious habit when compared to other studies conducted with adolescents in the school community.

Brazilian research found that 78% of the students analyzed had already consumed alcohol. Of these, 7% reported having consumed alcohol for the first time when they were between 5 and 10 years old, 45% when they were between 11 and 14 years, and 48% when they were between 15 and 18 years old. As for drinking frequency, 7% consumed alcohol at least once a week, 32% did it 2-3 times a week, 44% did it every weekend, 13% did it every day, and 4% did it occasionally [15].

International studies corroborate this reality. Data from Madagascar, Africa, show a high proportion of students who drink alcohol (69.1%), with men more likely to report this habit [16].

The hearing problems reported by 15 adolescents (7.1%) in the present study indicate that education professionals and society in general need to break the paradigm that deaf children cannot learn and cannot achieve the same goals as the other students. This requires changes in pedagogical practices, in school curricula, and in the educator's plans to work with such children because speech and hearing limitations cannot become a barrier to learning [17].

In addition, students' hearing health should be a major focus in school health promotion at all levels because the sense of hearing is one of the keys to good communication and learning. Research has shown that hearing health programs in educational institutions are aimed at the implementation of healthy habits, which involves the entire school community and environment, as well as the early detection of hearing loss so that it can be treated prior to affecting the students' performance [18].

In the context of oral health, dental diseases have a considerable impact on self-esteem, masticatory capacity, nutrition, and health in childhood and more advanced ages. Teeth have a significant role in the preparation of food for digestion, as well as in the aesthetics of the individual, in speech and in global communication [19]. Therefore, the experience of oral diseases has an impact on quality of life.

Research has shown that the health education provided by Health Promoting Schools has a positive impact on the oral health of adolescents, which can be observed by the low frequency of complaints related to this issue. In this regard, oral health education messages can be reinforced throughout the school years, which are the most influential stages of children's lives, and during which lifelong beliefs, attitudes and skills are developed [7].

In Denmark, school-based oral health programs have been developed over time and have involved the parents of young children in supervised brushing, which is encouraged from the age of six. As the age increases, educational actions become deeper, i.e., the students receive education about the following aspects: functions and structure of teeth, caries process, oral awareness about nutrition, hygiene models, trauma, sugar and types of candy, dental plaque, caries recording, mouth self-examination, health, well-being, general and oral health, flossing, lifestyles, gingivitis/periodontitis, and dental health care [20]. It should be noted that the involvement of the family, school and community in the process of planning and decision making is key to the success of these actions.

In the present research (Table 3), a statistically significant association ($p=0.009$) was found between the mean OHIP score and difficulty chewing and swallowing food. Interviewees with such difficulties had a mean OHIP score of 13.9, which is higher than that of students who did not report these problems – mean OHIP score of 5.2. This shows that the higher the value obtained by the respondent, the greater the impact of oral health on quality of life [21]. In the group analyzed, this finding reflects a self-perception based on the actual limitations caused by the oral condition.

Another study carried out with adolescents found that chewing and swallowing problems were the most reported problems in the OHIP-14 questionnaire, with a mean score of 20.3% [22]. This mean value is similar to that obtained in the present study.

In order to successfully provide an integrated school health service, schools are calling for improvements in the working relationship between health care centers and the community [23]. It is believed that knowledge of the oral health status of a population and the factors that may influence it can help promoting behavioral changes that lead to positive attitudes towards necessary care. Thus, the oral cavity may reflect people's living and health conditions [3].

In the present study, the fact that the institution investigated is a Health Promoting School that is responsible for providing nutrition education by pointing out healthy foods, teaching about the chewing of foods and including in its menu foods that stimulate salivary flow may have contributed to the absence of statistically significant associations between the mean OHIP score and burning mouth sensation or pain for no apparent reason ($p=0.057$ and $p=0.064$, respectively). However, those who reported feeling such problems presented higher mean OHIP scores.

Given that, it is assumed that an interdisciplinary approach can enable professionals to make decisions in an integrated way so that they can plan and carry out actions taking into consideration the epidemiological profile of the target population. Thus, medication control and a diet that stimulates salivary flow are helpful in dental care and effective in maintaining oral health [24].

The cariogenic feeding practices of adolescents favor the demineralization of teeth because of the acidic pH of foods purchased at school, such as snacks and soda [25]. Therefore, the multifaceted interactions between diet, nutrition and oral health require efforts from both the Nutrition and the Dentistry fields in order to assure the provision of comprehensive patient care in education and research practices [26].

Poor nutrition affects the teeth during their development and can worsen periodontal problems and oral infectious diseases. However, the significant effect of nutrition on the teeth is directly observed in the mouth – caries and enamel erosion. Tooth erosion is associated with acids from sugars and soft drinks [19].

It should be noted that self-perception of oral health is different across individuals, societies and generations. It is related to both physical and subjective aspects which are primarily influenced by socioeconomic and cultural factors [27]. These factors were related to preventive practices, daily oral health care, and social relations in the health promoting school analyzed.

It is known that the longer the average life of the population is, the more significant the concept of quality of life becomes. Thus, oral health plays an important role in this context [28]. The 2nd National Oral Health Conference considers that: "Oral health is an integral and inseparable part of a person's general health" [29]. Therefore, oral health care should be taught and encouraged in all stages of life, without interruption, so that the problems are minimized in adulthood.

The fact that the present research did not perform any comparisons with schools that are not health promoting institutions should be highlighted as a limitation. However, a study carried out in seven public schools has found adolescents with poor oral health conditions and a high prevalence of dental caries (51.29%) and pain (73.6%) that had a major impact on adolescents' quality of life [30].

Self-perception assessed by the OHIP-14 showed how much oral health influenced quality of life, although most adolescents believed that their overall health was very good. In recent years, there has been an increase in the promotion of oral health; however, there is an urgent need for preventive measures and oral hygiene instructions as early as possible.

V. IMPLICATIONS FOR SCHOOL HEALTH

Education permeates the health promotion proposal and is aimed at contributing to the politicization of health debates and practices. Therefore, the parameters for the interventions should consider a broad view of the educational environment with its physical, social and psychological aspects.

Thus, it is important to ascertain adolescents' satisfaction with their oral health so that the organization of dental care can be performed in a comprehensive way based on the capabilities and needs of this population group.

The present study was carried out in a reference school; therefore, its findings are expected to serve as a basis for integrated health promotion actions and systematic evaluations of students' health aimed at improving their quality of life through preventive and educational strategies.

With the support from Health Promoting Schools, health professionals, teachers, parents and/or legal guardians can promote activities to increase knowledge about Health Education and to improve students' oral health and quality of life.

HUMAN SUBJECTS APPROVAL STATEMENT

Without any conflicts of interest, the research project was approved by the Research Ethics Committee of the University of Fortaleza under Approval No. 745.659/2014. Written consent was obtained from the parents or legal guardians of students.

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REFERENCES

- [1] American Psychological Association. Developing adolescents: a reference for professionals. Washington: APA; 2002 [cited 2016 May 20]. Available from: <https://www.apa.org/pi/families/resources/develop.pdf>
- [2] World Health Organization. WHO's global school health initiative. Geneva: WHO; 1998.
- [3] Davoglio RS, Aerts DRGC, Abegg C, Freddo SL, Monteiro L. Fatores associados a hábitos de saúde bucal e utilização de serviços odontológicos entre adolescentes. *Cad Saúde Pública*. 2009;25(3):655-67.
- [4] Pilgrim NA, Blum RW. Adolescent mental and physical health in the English-speaking Caribbean. *Rev Panam Salud Publica* 2012;32(1):62-9.
- [5] Garbin CAS, Garbin AJI, Moimaz SAS, Gonçalves PE. A saúde na percepção do adolescente. *Physis* (Rio J). 2009;19(1):227-38.
- [6] Cardoso V, Reis AP, Iervolino SA. Escolas promotoras de saúde. *Rev. Bras. Crescimento Desenvol Hum*. 2008;18(2):107-15.
- [7] Kwan SYL, Petersen PE, Pine CM, Borutta A. Health-promoting schools: an opportunity for oral health promotion. *Bull World Health Organ*. 2005;83(9):677-85.
- [8] World Congress on Preventive Dentistry. 4th World Congress on Preventive Dentistry. Sweden: WCPD; 1993.
- [9] Saintrain MVL, Correa CRS, Saintrain SV, Nuto SAS, Vieira-Meyer APGF. Brazilian adolescent's oral health trends since 1986: an epidemiological observational study. *BMC Res Notes* 2015; 8:554.
- [10] Association for Supervision and Curriculum Development. Statement for the integration of health and education. Virginia: ASCD; 2015 [cited 2016 Sep 20]. Available from: [http://www.ascd.org/ASCD/pdf/siteASCD/wholechild/State ment-for-the-Integration-of-Health-and-Education_English.pdf](http://www.ascd.org/ASCD/pdf/siteASCD/wholechild/State%20ment-for-the-Integration-of-Health-and-Education_English.pdf)
- [11] Slade GD. Derivation and validation of a short form Oral Health Impact Profile. *Community Dental Oral Epidemiol*. 1997;25(40):284-90.
- [12] Berkey DB, Call RL, Loupe MJ. Oral health perceptions and self-esteem in non-institutionalized older adults. *Gerodontology* 1987; 3:109-12.
- [13] Brasil. Lei nº 8.069, de 13 de julho de 1990. Dispõe sobre o Estatuto da Criança e do Adolescente e dá outras providências. Brasília, 13 de julho de 1990; 169º da Independência e 102º da República [cited 2016 May 12]. Available from: http://www.planalto.gov.br/ccivil_03/leis/L8069.htm
- [14] World Health Organization. WHO Adolescent health [cited 2016 Apr 16]. Available from: http://www.who.int/topics/adolescent_health/en/
- [15] Anjos KF, Santos VC, Almeida OS. Perfil do consumo de bebidas alcoólicas por adolescentes escolares. *Rev Saúde Com* 2012;8(2):20-31.
- [16] Razanamihaja N, Befinoana, Marie-Laure B (2013) Alcohol consumption by school-going adolescents in madagascar: prevalence and associated risk factors. *J Alcoholism Drug Depend* 2013, 2:1 <http://dx.doi.org/10.4172/2329-6488.1000145>
- [17] Teixeira VLMO, Carvalho LOTD. Deficiência auditiva na escola: entre a realidade e o preconizado por estudiosos da educação. *Interdisciplinar: RevEletrUnivar*. 2011;(6):98-103.
- [18] Lacerda ABM, Soares VMN, Gonçalves CGO, Lopes FC, Testoni R. Oficinas educativas como estratégia de promoção da saúde auditiva do adolescente: estudo exploratório. *Audiol Commun Res*. 2013;18(2):85-92.
- [19] Moynihan P, Petersen PE. Diet, nutrition and the prevention of dental diseases. *Public Health Nutr*. 2004;7(1A):201-26.
- [20] Petersen PE, Torres AM. Preventive oral health care and health promotion provided for children and adolescents by the Municipal Dental Health Services in Denmark. *Int J Paediatr Dent*. 1999;9(2):81-91.

- [21] Gabardo MCL, Moysés ST, Moysés SJ. Autopercepção de saúde bucal conforme o Perfil de Impacto da Saúde Bucal (OHIP) e fatores associados: revisão sistemática. *Rev Panam Salud Publica*. 2013;33(6):439-45.
- [22] Hongxing L, List T, Nilsson IM, Johansson A, Astrøm AN. Validity and reliability of OIDP and OHIP-14: a survey of Chinese high school students. *BMC Oral Health*. 2014;14:158.
- [23] Borge AM, Manongi RN, Masatu MC, Klepp KI. Status and visions for the school health service as reported by local health care workers in northern Tanzania. *East Afr J Public Health*. 2008;5(2):79-85.
- [24] Saintrain MVL, Gonçalves RD. Salivary tests associated with elderly people's oral health. *Gerodontology*.2013; 30(2):91-7
- [25] Mateos A. Brasileiros comem cada vez mais e com pior qualidade. *Rev APCD*.1999;53(1):8-20.
- [26] Mallonee LFH, Boyd LD, Stegeman C. Practice paper of the academy of nutrition and dietetics: oral health and nutrition. *Chicago: Academy of Nutrition and Dietetics*.2014; 114:958.<https://doi.org/10.1016/j.jand.2014.04.004>
- [27] Martins AMEBL, Barreto SM, Silveira MF, Santa- Rosa TTA, Pereira RD. Autopercepção da saúde bucal entre idosos brasileiros. *Rev Saúde Pública*. 2010;44(5):912-22.
- [28] Barbosa AF, Barbosa AB. Odontologia geriátrica: perspectivas atuais. *JBC J BrasClinOdontol Integr*. 2002;6(33):231-34.
- [29] Ministério da Saúde (BR). Relatório final da 2ª Conferência Nacional de Saúde Bucal. Brasília: Conselho Nacional de Saúde, Ministério da Saúde; 1993.
- [30] Kozmhinsky VMR, Heimer M, Goes P. Sociodemographic factors and oral health conditions related to the impact on the quality of life of adolescents. *Pesq Bras Odontoped Clin Integr*. 2016;16(1):35-42.

Table.1. Analysis of the mean OHIP-14 score and sociodemographic characteristics. Fortaleza, Ceará, Brazil, 2016.

Variables	N (%)	Mean	Standard Deviation	p-value
Age				
11-14	29 (13.8)	5.6	7.3	0.819 ¹
15-19	181 (86.2)	5.4	6.7	
Marital Status				
Single	181 (86.2)	5.3	6.9	0.198 ¹
Other	29 (13.8)	6.2	6.2	
Gender				
Boys	70 (33.3)	5.5	7.5	0.680 ¹
Girls	140 (66.7)	5.4	6.4	
Skin Color				
White	69 (32.9)	5.8	6.6	0.066 ²
Black	18 (8.6)	7.0	7.6	
Pardo	90 (42.9)	5.4	6.7	
Other	33 (15.7)	4.0	6.9	
Employment				
Yes	10 (4.8)	7.2	9.7	0.788 ¹
No	200 (95.2)	5.4	6.6	
Income				
Upto 2 MW	99 (47.1)	5.3	6.4	0.969 ¹
More than 2MW	111 (52.9)	5.6	7.1	
YearsofStudy				
10	78 (37.1)	4.2	5.6	0.331 ²
11	88 (41.9)	6.1	7.3	
12	44 (21)	6.3	7.4	

Source: research data. ¹ Mann-Whitney Test; ² Kruskal-Wallis Test. MW = Minimum Wages

General health status	N (%)	OHIP Mean ± SD	p-value
Self-rated general health			
Verygood	84 (40.0)	4.3 ± 5.8	0.023 ²
Fair	124 (59.0)	6.1 ± 7.1	
Poor	2 (1.0)	17.0 ± 15.6	
Currenthealth status			
Betterthanlastyear	67 (31.9)	4.0 ± 5.0	0.003 ²
The same as last year	129 (61.4)	5.6 ± 7.0	
Worsethanlastyear	14 (6.7)	11.3 ± 9.2	
Vision Problems			
Yes	83 (39.5)	5.6 ± 6.7	0.789 ¹
No	127 (60.5)	5.4 ± 6.9	
HearingProblems			
Yes	15 (7.1)	9.8 ± 7.5	0.004 ¹
No	195 (92.9)	5.1 ± 6.6	
Speech Problems			
Yes	45 (21.4)	7.2 ± 7.9	0.129 ¹
No	165 (78.6)	5.0 ± 6.4	
Current use ofmedication			
Yes	39 (18.6)	7.4 ± 6.2	0.002 ¹
No	171 (81.4)	5.0 ± 6.8	
Mouthwash			
Yes	82 (39.0)	6.3 ± 7.6	0.210 ¹
No	128 (61.0)	4.9 ± 6.1	
Drinking			
Yes	19 (9.0)	7.1 ± 8.1	0.458 ¹
No	191 (91.0)	5.3 ± 6.6	

Source: research data. ¹Mann-Whitney test; ²Kruskal-Wallis test.

Table 3. Analysis of the mean OHIP-14 score and oral health conditions. Fortaleza, Ceará, Brazil, 2016.

Oral Health Condition	n (%)	OHIP Mean±SD	p-value
Drymouth			0.246
Yes	45 (21.4)	5.9 ±6.9	
No			
Difficulty chewing and swallowing food			0.009
Yes	7 (3.3)	13.9±9.7	
No	203 (96.7)	5.2±6.5	
Problems with the taste of food			0.102
Yes	14 (6.7)	9.6±9.6	
No	196 (93.3)	5.2±6.5	
Burningmouthsensation			0.057
Yes	5 (2.4)	11.6±10.0	
No	205 (97.6)	5.3±6.7	
Pain for no apparent reason			0.064
Yes	32 (15.2)	7.4±7.2	
No	178 (84.8)	5.1±6.7	

Source: research data. ¹Mann-Whitney test.