

Psychosocial aspects and the impact of oral health on quality of life of Brazilian adults

Aspectos psicossociais e percepção de impacto da saúde bucal na qualidade de vida em adultos do Sul do Brasil

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ABSTRACT: *Introduction:* This research aimed to investigate the association between psychosocial aspects and the impact of oral health on quality of life among adults. *Method:* This population-based cross-sectional study was conducted with 1,100 adults aged 20 years or older from a medium-sized city in Rio Grande do Sul, Southern Brazil. The outcome was Oral Health Impact Profile (OHIP-14) in three categories: better (OHIP=0: 50% of lower scores), moderate (OHIP 1–12.6: 25% of intermediate scores), and worse (OHIP≥12.7: 25% of higher scores). The exposures included measurements of social support, resilience, sense of coherence, spirituality, quality of life, and stress. We calculated crude and adjusted odds ratios and their respective 95% confidence intervals using ordinal logistic regression. *Results:* After adjustment for demographic, socioeconomic, and behavioral variables, individuals with low social support, low sense of coherence, low quality of life, and high level of stress were, respectively, 2.16, 2.90, 2.94, and 1.50 times more likely to report a worse impact of oral health on quality of life than those with favorable characteristics. *Conclusions:* The findings suggest that psychosocial aspects can influence the perceived impact of oral health on quality of life. Health policies, programs, and services must recognize the mutual relationship between oral health indicators and psychosocial aspects among adults.

Keywords: Oral health. Quality of life. Social support. Psychological resilience. Psychological stress. Adult.

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RESUMO: *Introdução:* A pesquisa objetivou investigar a associação entre os aspectos psicossociais e o impacto das condições bucais sobre a qualidade de vida de adultos, escopo ainda pouco explorado em pesquisas nacionais. *Método:* Um estudo transversal de base populacional foi realizado com 1.100 adultos de 20 anos de idade ou mais, em uma cidade de médio porte do Rio Grande do Sul. O desfecho foi avaliado por meio do Oral Health Impact Profile (OHIP-14) enquanto as exposições incluíram medidas de apoio social, resiliência, senso de coerência, espiritualidade, qualidade de vida e estresse. Foram calculadas as razões de chances brutas e ajustadas, bem como seus intervalos de confiança de 95% utilizando-se regressão logística ordinal. *Resultados:* Após o ajuste para variáveis demográficas, socioeconômicas e comportamentais, indivíduos com baixo apoio social, baixo senso de coerência, baixa qualidade de vida e alto nível de estresse possuíam respectivamente 2,16; 2,90; 2,94; 1,50 vezes mais chance de relatar um pior impacto da condição na qualidade de vida quando comparados aos indivíduos com estas características favoráveis. *Conclusões:* Os achados sugerem que os aspectos psicossociais podem influenciar a avaliação que as pessoas fazem do impacto da condição bucal sobre a qualidade de vida. É importante que políticas, programas e serviços de saúde reconheçam a relação mútua entre os indicadores de saúde bucal e os aspectos psicossociais de adultos.

Palavras-chave: Saúde Bucal. Qualidade de Vida. Apoio Social. Resiliência Psicológica. Estresse Psicológico. Adulto.

INTRODUCTION

Oral health is regarded as multidimensional construct. It involves the ability to speak, smile, smell, taste, touch, chew, swallow, and convey emotions through facial expressions with confidence and without pain, discomfort, and diseases¹. Oral health is considered fundamental to health and physical and mental well-being, existing along a *continuum* determined by the values and attitudes of individuals and communities and reflecting important physiological, social, and psychological aspects for the quality of life¹. Therefore, oral health relates to people's experiences, expectations, and adaptability¹, affecting them both physically and psychologically, and influencing the way they grow, enjoy life, and socialize². In this regard, subjective instruments, also called socio-dental indicators, have been developed to identify self-reported oral health needs, aiming to assess their impact on quality of life^{2,3}.

In general, an unfavorable impact of oral health on quality of life has been associated with younger individuals, women, black people, those with low socioeconomic status, low schooling, poor clinical conditions, using inadequate dental prostheses, and in need of dental treatment⁴⁻⁶. In addition, oral diseases can interfere with the daily activities of individuals due to pain and suffering episodes, psychological embarrassment, such as humor and irritation, and social deprivation⁶.

Different psychosocial aspects, including social support⁷⁻⁹, resilience¹⁰, sense of coherence¹¹⁻¹⁴, spirituality¹⁵, and stress^{16,17}, have been associated with oral health indicators, especially clinical ones, such as the number of decayed and missing teeth, the presence of periodontal pockets, dental plaque levels, and dental caries. Moreover, these psychosocial

variables have also been associated with oral health-related behaviors, such as toothbrushing frequency, sugar intake, and the use of dental services^{11,14,18}. Despite the growing number of studies addressing the relationship between psychosocial aspects and oral health, most analyses investigate the association of oral health-related quality of life with sociodemographic aspects, oral conditions, health behaviors, and the use of health services^{4-6,19,20}. Relatively few studies assess a wide range of psychosocial aspects to explain the impact of oral health on quality of life in adults. Thus, this research aimed to investigate the association between psychosocial aspects and the perceived impact of oral health on quality of life among adults from a city in Southern Brazil.

METHODS

We conducted a population-based cross-sectional study with individuals aged 20 years or older, living in the urban area of a medium-sized city in Southern Brazil. We excluded people with any cognitive problem. The estimated population of the city was 225,520 inhabitants, and the primary health care system comprises a general hospital, 28 basic health units, and 17 affiliated health facilities²¹. The primary care system has 12 oral health teams connected to the Family Health Strategy, distributed among basic health units and health centers from the region.

Data were collected through structured interviews with the head of the household.

Sample size calculation was based on data from the pilot study, using a method for proportions with cluster randomization and the outcome “self-perceived general health”²². Adopting an intraclass correlation coefficient of 0.05 and a 95% confidence level, we estimated that a sample of 1,260 households from 35 census tracts would have an 85% power to detect a difference of 7% in the prevalence of poor self-perceived health among exposed and non-exposed areas. This sample size was increased by 20% in the number of households and 10% in the number of tracts due to possible losses and to control for confounders.

The first stage of selection involved a random draw of census tracts among the 270 existing in the urban area of the city. Next, blocks from the tracts were randomly selected, and all households were visited until reaching the required number.

When those responsible for the household were absent, three return visits were made.

Structured interviews were conducted using a standardized and previously tested questionnaire consisting of demographic, socioeconomic, behavioral, and psychosocial variables. The interviewers were health undergraduate and graduate students. A pilot study with 100 individuals was conducted to assess the quality of the instruments, train the interviewers, and adjust the research logistics. The quality control of data collection was done by telephone, with a random sample of 10% of the participants, using an instrument similar to that of the study, with variables that would not change in a short interval.

The outcome was the socio-dental indicator Oral Health Impact Profile (OHIP). The instrument has 14 items and assesses the impact of oral health on quality of life, addressing aspects

such as dysfunction, discomfort, and disability attributed to oral conditions³. The answers to these items ranged from never (0) to always (4), and the corresponding points were added to generate a score between 0 and 56. The higher the score, the worse the impact of oral health on quality of life.

The main exposures were social support, resilience, sense of coherence, spirituality, quality of life, and stress. We measured social support with the Medical Outcomes Study (MOS) scale²³, which comprises 19 items that assess the material, affectionate, and emotional support, positive social interaction, and information; in Brazil, Griep et al.^{24,25} validated this scale. The answers range from never (1) to always (5), and higher scores represent greater social support.

Resilience was evaluated with the Wagnild and Young's scale²⁶, validated for Brazil by Pesce et al.²⁷. It consists of 25 items, including serenity, perseverance, self-confidence, life meaning, and self-sufficiency. The items are positively described with responses varying from strongly disagree (1) strongly agree (7). The total score ranges between 25 and 175 points, and higher values represent greater resilience.

We assessed the sense of coherence using the short version of Antonovsky's scale²⁸, validated for Brazil by Freire et al.¹⁴. It includes 13 items, whose answers range between 1 (extremely negative) and 7 (extremely positive). The sum of the items generates a score in which higher values correspond to a greater sense of coherence.

The spirituality variable was assessed with the Spiritual Involvement and Beliefs Scale, validated for the Portuguese language²⁹. The scale has 26 items, with answers ranging from strongly disagree (1) to strongly agree (5), and higher scores indicating a greater level of spirituality.

We analyzed the quality of life based on the WHO-8: EUROHIS scale, consisting of eight items derived from the short version of the WHOQOL, which covers self-satisfaction, satisfaction with personal relationships, income, housing conditions, health status, and the performance of daily activities, as well as the perceived overall quality of life, and the energy to face the everyday life³⁰. The scale has been validated for the Portuguese language in the Brazilian version of WHOQOL-Bref³¹. The responses vary from very dissatisfied (1) to very satisfied (5), and higher scores represent a better quality of life.

In order to make the scores comparable, the sum of OHIP, social support, sense of coherence, resilience, spirituality, and quality of life scores was standardized from 0 to 100, according to the following formula (Equation 1):

$$(\text{observed value} - \text{minimum value}) \times 100 / (\text{maximum value} - \text{minimum value}) \quad (1)$$

Due to the asymmetry in outcome distribution, the latter was rated as better (OHIP=0: 50% of lower scores), moderate (OHIP 1–12.6: 25% of intermediate scores), and worse (OHIP≥12.7: 25% of higher scores). The sum of the scores of each psychosocial variable was categorized in the same way (high, moderate, low), based on quartiles.

Lastly, we assessed the level of stress using a face scale with a single item. The scale displayed seven stylized faces composed of circles with equal eyes and mouths that varied from a smile to a frown, showing different stages between well-being and malaise. The interviewees were asked if any of the faces expressed their level of stress in the previous three months. The first three cheerful faces indicated a normal level of stress; the last three sad faces pointed to a high level of stress, while the middle one represented the moderate level. The authors of the scale tested its construct validity by administering six items to 22 adults and reported a median correlation of 0.82 for the scale of one item³².

The demographic variables included gender, age (10-year groups), ethnicity (white and black/multiracial), and marital status (married, single, and separated/widow). The socioeconomic variables were level of schooling (high: ≥ 12 years; moderate: 5–11 years; and low: ≤ 4 years) and income, calculated based on quartiles (high: $\geq R\$ 3,185$; moderate: $R\$ 1,050$ – $3,184$; and low: $\leq R\$ 1,049$). The behavioral variables were: consumption of candies (low: does not eat or < 1 time per week; moderate: 1 to 3 times per week; and high: more than 4 times per week or daily); smoking (non-smoker, ex-smoker, and smoker), self-perceived oral health (good/very good/excellent and regular/poor), and dentist visit in the previous 12 months (no and yes).

We performed double data entry in the software Epi-data 3.1 and compared them after to avoid typing errors. All analyses were conducted using the software Stata 12.1.

We performed descriptive analyses with absolute and relative frequencies. We used the χ^2 test for linear trend to verify the proportions of OHIP according to the independent variables. The association between psychosocial aspects and OHIP was calculated by ordinal logistic regression, estimating crude and adjusted odds ratios (ORs). The ordinal regression generates the ORs that estimate the chance of a dependent variable to increase and move to a higher category, following the increment in the independent variable. For the proportional odds assumption, we used the 'gologit2' command with the 'autofit' option to adjust the coefficients of the categories of variables that had the assumption violated.

Only the possible confounding factors were used in the multivariate analysis. To be considered a confounding factor, the variable should be associated with both the exposure and the outcome, adopting a significance level lower than 5% ($p < 0.05$).

Chart 1 describes the associations of psychosocial aspects according to demographic, socioeconomic, and behavioral variables, with the control following these results. All analyses accounted for the complex sample design.

The Research Ethics Committee of Universidade Vale do Rio dos Sinos (Unisinos) received and approved this research project. We requested that all participants signed the informed consent form and guaranteed data confidentiality.

RESULTS

The main reasons for losses were inhabited houses or stores (8%), refusals (4%), and the absence of those responsible for the household in all three visit attempts (2%). In total,

1,100 people from 36 census tracts were interviewed. We lost five participants due to incomplete OHIP data; therefore, this analysis involved 1,095 individuals. The mean scores – from 0 to 100 – for OHIP, social support, resilience, sense of coherence, spirituality, and quality of life were, respectively, 7.4 (SD=13.6), 84.7 (SD=19.4), 65.4 (SD=16.9), 71.5 (SD=8.8), 70 (SD=10.8), and 60.5 (SD=13.3).

Most of the study population consisted of women (71.8%), white people (84%), married individuals (56%), those aged between 20 and 49 years (62.5%), with moderate household income (52.9%), and moderate level of schooling (65.3%) (Table 1). With respect to behavioral characteristics, 47% of the interviewees reported low frequency of consumption of candies, 55% declared being non-smokers, 63.5% reported good, very good, or excellent self-perceived oral health, and 66.2% claimed having visited the dentist in the previous 12 months (Table 2).

Women, older individuals, smokers, those with lower schooling, lower income, and who reported having poor or regular oral health presented the worst OHIP scores. Except for the spirituality dimension, all psychosocial variables were associated with the outcome,

Chart 1. Associations between psychosocial aspects and the Oral Health Impact Profile (OHIP), according to demographic, socioeconomic, behavioral, and oral health-related variables.

	Worse OHIP	Low social support	Low resilience	Low sense of coherence	Low spirituality	Low quality of life	High stress
Female	+S**	+S*	+S***	+S*	- S*	+S***	+S***
Older age groups	+S***	NS	NS	- S**	- S***	+S***	- S***
Black/multiracial ethnicity	NS	NS	NS	+S**	NS	NS	+S*
Separated/widow marital status	+S***	+S***	NS	+S***	NS	+S***	NS
Low Schooling	+S*	NS	+S***	+S***	- S*	+S***	NS
Low income	+S***	NS	+S***	+S***	NS	+S***	+S***
Consumption of Candies	NS	NS	+S*	NS	NS	NS	NS
Smoking	+S***	NS	NS	NS	NS	+S*	+S***
Poor self-perceived health	+S***	+S**	+S***	+S***	+S**	+S***	+S***
Dentist visit in the previous 12 months	NS	NS	NS	NS	NS	- S***	NS

+ and -: association direction, that is, directly (+) or inversely (-) proportional; NS: $p > 0.05$; S*: $p < 0.05$; S**: $p < 0.01$; S***: $p < 0.001$.

Table 1. Sample distribution and levels of the Oral Health Impact Profile (OHIP), according to demographic and socioeconomic variables in adults from a city in Southern Brazil (n=1,095)*.

Variable	OHIP				p**
	Total	Better (=0)	Moderate (1–12.6)	Worse (≥12.7)	
	n (%)	n (%)	n (%)	n (%)	
OHIP	1.095 (100)	623 (56.9)	251 (22.9)	221 (20.2)	
Gender					
male	308 (28.1)	187 (60.7)	79 (25.6)	42 (13.6)	0.007
female	787 (71.9)	436 (55.4)	172 (21.9)	179 (22.7)	
Age group					
20 to 29	247 (22.6)	153 (61.9)	65 (26.3)	29 (11.7)	< 0.001
30 to 39	181 (16.5)	116 (64.1)	31 (17.1)	34 (18.8)	
40 to 49	258 (23.6)	154 (59.7)	44 (17.1)	60 (23.3)	
50 to 59	215 (19.6)	100 (46.5)	59 (27.4)	56 (26.0)	
≥60	194 (17.7)	100 (51.5)	52 (26.8)	42 (21.6)	
Ethnicity					
white	918 (84.0)	514 (56.0)	216 (23.5)	188 (20.5)	0.304
black/multiracial	175 (16.0)	107 (61.1)	35 (20.00)	33 (18.9)	
Marital status					
married	612 (55.9)	368 (60.1)	132 (21.6)	112 (18.3)	0.001
single	267 (24.4)	154 (57.7)	76 (25.1)	46 (17.2)	
separated/widow	216 (19.7)	101 (56.8)	52 (24.1)	63 (29.2)	
Schooling (years)					
high (≥12)	166 (15.6)	95 (57.2)	50 (30.1)	21 (12.7)	0.014
moderate (5–11)	694 (65.2)	410 (59.1)	149 (21.5)	135 (19.5)	
low (≤4)	204 (19.2)	104 (51.0)	47 (23.0)	53 (26.0)	
Income (R\$)					
high (≥3,185)	268 (25.1)	166 (61.9)	67 (25.0)	35 (13.1)	< 0.001
moderate (1,050–3,184)	563 (52.9)	335 (59.5)	114 (20.2)	114 (20.2)	
low (≤1,049)	234 (22.0)	105 (44.9)	64 (27.4)	65 (27.8)	

*Divergent sums correspond to missing values in some variables; ** χ^2 test for linear trend.

Table 2. Sample distribution and levels of the Oral Health Impact Profile (OHIP) according to behavioral variables and psychosocial aspects in adults from a city in Southern Brazil (n=1,095).

Variable	Total n (%)	OHIP			p*
		Better (= 0)	Moderate (1–12.6)	Worse (≥ 12.7)	
OHIP	1.095 (100)				
Consumption of candies					
low (does not eat, <1×/week)	519 (47.4)	294 (56.6)	111 (21.4)	114 (22.0)	0.595
moderate (1–3×/week)	285 (26.0)	162 (56.8)	75 (26.3)	48 (16.8)	
high (daily, ≥4×/week)	291 (26.6)	167 (57.4)	65 (22.3)	59 (20.3)	
Smoking					
non-smoker	604 (55.2)	363 (60.1)	132 (21.9)	109 (18.0)	0.001
ex-smoker	229 (20.9)	130 (56.8)	60 (26.2)	39 (17.0)	
smoker	262 (23.9)	130 (49.6)	59 (22.5)	73 (27.9)	
Self-perceived oral health					
good/very good/excellent	695 (63.5)	448 (64.5)	160 (23.0)	87 (12.5)	< 0.001
regular/poor	400 (36.5)	175 (43.8)	91 (22.8)	134 (33.5)	
Dentist visit in the previous 12 months					
no	369 (33.8)	208 (56.4)	91 (24.7)	70 (19.0)	0.841
yes	723 (66.2)	413 (57.1)	160 (22.1)	150 (20.7)	
Social support					
high (=100)	380 (34.8)	254 (66.8)	79 (20.8)	47 (12.4)	< 0.001
moderate (76–99)	436 (39.9)	238 (54.6)	101 (23.2)	97 (22.2)	
low (≤75)	276 (25.3)	128 (46.4)	71 (25.7)	77 (27.9)	
Resilience					
high (≥76)	260 (23.9)	150 (57.7)	63 (24.2)	47 (18.1)	0.008
moderate (68–75)	535 (49.2)	324 (60.6)	119 (22.2)	92 (17.2)	
low (≤67)	293 (26.9)	146 (49.8)	66 (22.5)	81 (27.6)	
Sense of coherence					
high (≥79)	253 (23.3)	176 (69.6)	62 (24.5)	15 (5.9)	< 0.001
moderate (55–79)	552 (50.7)	319 (57.8)	127 (23.0)	106 (19.2)	
low (≤54)	283 (26.0)	126 (44.5)	59 (20.8)	98 (34.6)	
Spirituality					
high (≤64)	238 (21.9)	136 (57.1)	55 (23.1)	47 (19.7)	0.393
moderate (65–76)	569 (52.3)	328 (57.6)	136 (23.9)	105 (18.5)	
low (≥77)	280 (25.8)	156 (55.7)	57 (20.4)	67 (23.9)	
Quality of life					
high (≤53)	232 (21.3)	167 (72.0)	44 (19.0)	21 (9.1)	< 0.001
moderate (54–70)	556 (51.1)	325 (28.5)	142 (25.5)	89 (16.0)	
low (≥71)	301 (27.6)	128 (42.5)	64 (21.3)	109 (36.2)	
Stress					
normal ☺☺☺	615 (56.2)	373 (60.7)	152 (24.7)	90 (14.6)	< 0.001
moderate ☺	168 (15.4)	90 (53.6)	39 (23.2)	39 (23.2)	
high ☹☹☹	311 (28.4)	159 (51.1)	60 (19.3)	92 (29.6)	

* χ^2 test for linear trend.

with worse psychosocial conditions corresponding to a worse perceived impact of oral health on quality of life (Tables 1 and 2).

Table 3 shows the crude and adjusted ORs for the different levels of OHIP, according to psychosocial variables of the sample. In the crude analysis, psychosocial aspects, such as social support, sense of coherence, resilience, quality of life, and stress, showed a statistically significant association with the perceived impact of oral health on quality of life.

These effects remained after adjustment for possible confounding factors. Individuals with low social support, low sense of coherence, low quality of life, and high level of stress were, respectively, 2.16, 2.90, 2.94, and 1.50 times more likely to report a worse impact of one of these conditions on quality of life than those with opposite (favorable) characteristics (Table 3). In contrast, the psychosocial variables resilience and spirituality were not statistically associated with the outcome in the adjusted analysis.

DISCUSSION

The results of this study showed that adverse psychosocial conditions were associated with a worse impact of oral health on quality of life, even after adjustment for demographic, socioeconomic, behavioral, and oral health service-related variables. A possible explanation for the greater impact in individuals with a worse psychosocial profile would be the fact that these variables, directly and indirectly, affect attitudes and behaviors that represent a risk to health^{33,34}. For example, lower levels of social support were associated with a worse perceived impact of oral health on quality of life. Social support covers the structure and quality of the network of social relationships, involving the personal satisfaction with the support received and with manifestations of love and affection, which, consequently, lead to positive life outcomes³³. Social support acts as an agent that integrates the individual into society, minimizing the risks of social exclusion and damage to health^{7,8,32}. Besides its protective nature, it also works as an instrument of autonomy for individuals as they learn and share ways of dealing with health and disease processes in the community³³. Thus, it can be regarded as a synergistic relationship in which the fragility of social ties could amplify the perceived impact of negative oral health, and the latter, in turn, could also increase the individual's isolation.

The present study identified that lower levels of sense of coherence were also associated with a worse impact of oral health on quality of life. Studies conducted with Finnish¹¹⁻¹³ and Brazilian^{35,36} adults reported that a strong sense of coherence is connected to better oral health and healthier behaviors. Adults who had a low sense of coherence also presented worse levels of OHIP, which are indirectly related to poor oral health^{11,13,36}. In general, the authors support the idea that the sense of coherence has a protective behavioral effect based on regulating the emotion caused by stress factors and on the pursuit of health promotion behaviors. The effect of the sense of coherence on the incidence of dental caries is explained by oral health behaviors (for example, toothbrushing frequency, dental care, and frequency of sugar intake), as a strong sense of coherence might be associated with the

adoption of healthier behaviors^{36,37}. On the other hand, it is also plausible that a negative oral condition could affect the sense of coherence.

Table 3. Crude and adjusted Odds Ratios (OR) for levels of the Oral Health Impact Profile according to psychosocial variables in adults from a city in Southern Brazil (n=1,095).

Psychosocial variables	Crude OR (95%CI)	p	Adjusted OR (95%CI)	p*
Social support				
high (=100)	1	< 0.001	1	< 0.001
moderate (76–99)	1.74 (1.42 – 2.13)		1.65 (1.36 – 2.00) ^a	
low (≤75)	2.41 (1.85 – 3.12)		2.16 (1.62 – 2.86) ^a	
Sense of coherence				
high (>79)	1	< 0.001	1	< 0.001
moderate (55–79)	1.82 (1.32 – 2.52)		1.68 (1.19 – 2.36) ^b	
low (≤54)	3.50 (2.21 – 5.53)		2.90 (1.81 – 4.61) ^b	
Quality of life				
high (≤53)	1	< 0.001	1	< 0.001
moderate (54–70)	1.81 (1.25 – 2.60)		1.63 (1.14 – 2.33) ^c	
low (≥71)	4.06 (2.52 – 6.52)		2.94 (1.90 – 4.54) ^c	
Stress				
normal ☺☺☺	1	< 0.001	1	0.004
moderate ☹	1.42 (1.00 – 2.02)		1.54 (1.04 – 2.25) ^d	
high ☹☹☹	1.71 (1.29 – 2.26)		1.50 (1.12 – 1.99) ^d	
Resilience				
high (≥76)	1	0.056		
moderate (68–75)	0.90 (0.66 – 1.21)			
low (≤67)	1.47 (0.97 – 2.23)			
Spirituality				
high (≤64)	1	0.595		
moderate (65–76)	0.96 (0.72 – 1.28)			
low (≥77)	1.12 (0.71 – 1.74)			

OR: odds ratio; 95%CI: 95% confidence interval; a: adjusted for gender, marital status, and self-perceived oral health; b: adjusted for gender, age group, ethnicity, marital status, schooling, income, and self-perceived oral health; c: adjusted for gender, age group, marital status, schooling, income, smoking, self-perceived oral health, and dentist visit; d: adjusted for gender, age group, ethnicity, income, smoking, and self-perceived oral health; *Wald test for linear trend.

Moreover, we identified a strong association between the quality of life and OHIP among the participants – the lower the quality of life, the worse the perceived impact of oral health on quality of life. This low quality of life might reflect poor socioeconomic conditions, which could also be associated with other factors, such as behavioral characteristics^{2,3,18}. Similarly, participants in the present study who had an unfavorable socioeconomic status also reported lower quality of life. In contrast, we emphasize that OHIP and quality of life express, in some measure, concurrent constructs, which could partly justify the association found.

As to stress, our study identified that poor perceived well-being was related to a worse impact of oral health on quality of life, corroborating other findings^{16,17}. Thus, stress might increase anxiety, directly affecting the immune system and decreasing the salivary flow. In addition to this process, we could infer that anxiety, psychological stress, and depression could indirectly influence the oral health, leading, for example, to greater consumption of candies, facilitating the progression of dental caries and periodontal diseases^{34,38}. However, in the present study, the consumption of candies was not associated with either the outcome or the perceived stress. In this case, we underline that the relationship between stress and the negative impact of oral health on quality of life is mediated by different emotional and behavioral coping strategies developed by individuals, besides eating habits, an aspect not evaluated in this study.

The results of this study must to be interpreted in the light of some limitations. The cross-sectional design may lead to reverse causality bias because both the exposure and the outcome were measured at the same time. For instance, we might assume that worse oral health or a worse impact of oral health can also impair the psychosocial status of the individual. Therefore, this association should be better investigated by studies with a longitudinal design, in which both the exposure and the outcome are measured repeatedly and prospectively. A positive aspect of this research is the fact that all variables – outcome and exposures – were assessed with validated scales, which to some extent may have minimized the measurement error.

CONCLUSION

The present study showed the association between some psychosocial aspects and the perceived impact of oral health on quality of life, a subject little explored in the national literature. Lower levels of social support, sense of coherence, and perceived overall quality of life, as well as higher stress scores, were related to worse evaluations of the impact of oral health. The use of subjective oral health indicators can complement the clinical information and provide knowledge about the individual's perception of their oral health and the need for treatment. It is also important to assess these indicators within the psychological and social context of the individual. In this regard, the findings reported herein indicate the need for public health policies, programs, and services that take into account the mutual relationships between psychosocial aspects and oral health.

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