

Manuela Wanderley Ferreira Lopes¹, Estela Santos Gusmão², Renato de Vasconcelos Alves², Renata Cimões³

Utjecaj kroničnog parodontitisa na kvalitetu života u Brazilu

The Impact of Chronic Periodontitis on Quality of Life in Brazilian Subjects

¹ Poslijediplomski student Federalnog sveučilišta u Pernambucu, Brazil
Post graduate student, Federal University of Pernambuco, Brazil.

² Zavod za oralnu medicinu Sveučilišta u Pernambucu, Brazil
Department of Oral Medicine, University of Pernambuco, Brazil.

³ Zavod za protetiku i oralnu te facijalnu kirurgiju Federalnog sveučilišta u Pernambucu, Brazil
Department of Prosthesis and Oral and Facial Surgery, Federal University of Pernambuco, Brazil.

Sažetak

Svrha: Istraživanja utjecaja oralnog zdravlja na kvalitetu života koriste se mnogim indeksima kvalitete života. Zadatak ove analize bio je procijeniti vezu parodontitisa i kvalitete života na uzorku pacijenata s parodontitisom. **Materijal i načini:** Ukupno 302 pacijenta s blagim, umjerenim i teškim parodontitisom odgovorilo je na pitanja u upitniku kojim su se ispitivale sociološko-ekonomske varijable (dob, spol, školovanje, bračno stanje te prihod) te na upitnik OHQoL-UK-a (United Kingdom Oral Health-Related Quality of Life). Cilj je bio procijeniti utjecaj parodontitisa na kvalitetu života. **Rezultati:** Parodontitis ima velik utjecaj na kvalitetu života, sa statistički znatnim razlikama kad je riječ o jedenju, izgledu, općem zdravlju, osmijehu te sociološko-ekonomskom statusu. Vrijednosti OHQoL-UK-a pokazale su povezanost sa spolom i prihodom kućanstva ($p < 0,05$). Statistički velika povezanost bila je između stupnja parodontitisa i vrijednosti OHQoL-UK-a ($p < 0,05$), no niže vrijednosti kvalitete života bile su češće kod pojedinaca s težim oblicima kroničnog parodontitisa. **Zaključak:** Ovo istraživanje o utjecaju parodontitisa na kvalitetu života otkrilo je da su negativni aspekti češći kod pojedinaca s teškim kroničnim parodontitisom, što upućuje na samopercepciju pacijenata kad je riječ o zdravlju parodontalnih tkiva.

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Adresa za dopisivanje

Prof. Renata Cimões
Zavod za protetiku i oralnu te facijalnu kirurgiju Federalnog sveučilišta u Pernambucu
Rua Guedes Pereira 114/302, Casa Amarela,
Recife-PE, Brazil. 52060-150.
Telefon/telefax: (55) 81 33047292
renata.cimoes@globo.com

Glavne riječi

oralno zdravlje; kvaliteta života; parodontalne bolesti; parodontitis.

Uvod

Sve veće zanimanje za to kako oralno zdravlje utječe na kvalitetu života, rezultiralo je nizom indeksa kojima se kvantificira i opisuje utjecaj oralnoga zdravlja na svakodnevni život pojedinaca (1). Razvijeni su bili i rabili su se instrumenti kao što je upitnik o oralnom zdravlju u odnosu prema kvaliteti života (engl. Oral Health Related Quality of Life - OHRQL), profil utjecaja oralnoga zdravlja (engl. Oral Health Impact Profile - OHIP) te indeks dentalnog zdravlja (engl. Dental Health Index - DHI) (2,3). No, na taj se način nisu mjerili samo pozitiv-

Introduction

With the growing interest of dentistry regarding how oral health can affect quality of life, a number of indexes have emerged with the aim of quantifying and describing the effects of oral health on the day-to-day lives of individuals (1). Instruments such as the Oral Health Related Quality of Life (OHRQL) questionnaire, Oral Health Impact Profile (OHIP) and the Dental Health Index (DHI) have been developed and administered to patients (2, 3). However, these instruments do not measure both the positive and negative aspects of the relationship be-

ni, nego i negativni aspekti odnosa između oralnoga zdravlja i kvalitete života (4). Kako bi analizirali oba aspekta, McGrath i suradnici (5) razvili su i procijenili indeks oralnoga zdravlja i kvalitete života Ujedinjenog Kraljevstva (engl. United Kingdom Oral Health Quality of Life, OHQoL-UK) koji se temelji na percepciji populacije Ujedinjenog Kraljevstva o tome kako oralno zdravlje utječe na kvalitetu života.

OHQoL-UK je upitnik sa 16 ključnih standardiziranih pitanja o četirima različitim aspektima kvalitete života (simptomima, fizičkim, psihološkim i socijalnim aspektima) koji se odnose i na učinak i utjecaj oralnoga zdravlja na kvalitetu života (5). Dimenzija učinka ispituje fizičke, psihološke i socijalne aspekte povezane s oralnim zdravljem, a dimenzija utjecaja raščlanjuje utjecaj oralnoga zdravlja na svakodnevne aktivnosti - žvakanje i komunikaciju među pojedincima (6). Dini i suradnici (7) preveli su, prilagodili i procijenili godine 2003. portugalsku verziju OHQoL-UK-a na odrasloj brazilskoj populaciji te odredili primjenjivost, internu i eksteranu ponovljivost i performanse.

Za mnoge oralne bolesti nema lijeka, a njihovi negativni učinci mogu djelovati na individualno i zajedničko dobro osjećanje (6). Parodontalna je bolest dosta prevalentna (8), a karakterizira je gubitak pričvrstka, sve veća dubina sondiranja te upala i destrukcija parodontalnih tkiva. To rezultira mnogim znakovima i simptomima koji mogu utjecati na kvalitetu života pojedinca (9). Zato je svrha ovog istraživanja bila podijeliti portugalsku verziju upitnika OHQoL-UK kako bi se procijenio učinak parodontitisa na kvalitetu života te povezoao na sociološko-ekonomske/demografske varijable.

Materijal i metode

Uzorak

Uzorak je bila skupina pacijenata Parodontološke klinike dodiplomskog studija stomatologije federalnog sveučilišta u Pernambucu (UFPE-a), Parodontološke klinike specijalizanata UFPE-a te Parodontološke klinike Stomatološkog fakulteta UFPE-a u državi Pernambucu, u sjeveroistočnom dijelu Brazila. Slučajnim odabirom bila su izabrana 302 pacijenta oba spola u dobi između 18 i 59 godina. Svi su bili pismeni, pristali su sudjelovati u istraživanju i potpisali su pristanke. Dijagnozu kroničnog parodontitisa postavljali su specijalisti nakon drugog pregleda, a služili su se parodontalnim parametrima (kliničkom razinom pričvrstka i dubinom sondiranja) te periapikalnim rendgenskim snimka-

tween oral health and the quality of life (4). In order to address these two aspects, McGrath et al. (5) developed and validated the United Kingdom Oral Health Quality of Life (OHQoL-UK) index based on the perception of the population of the United Kingdom on how oral health affects quality of life.

The OHQoL-UK is a questionnaire with 16 key standardized questions related to four distinct aspects of quality of life (symptoms, physical aspects, psychological aspects and social aspects), addressing both the effect and impact of oral health on the quality of life (5). The effect dimension examines physical, psychological and social effects attributed to oral health and the impact dimension examines the impact oral health has in the performance of daily activities, masticating and communication among individuals (6). In 2003, Dini et al. (7) translated and validated the Portuguese version of the OHQoL-UK on an adult Brazilian population, determining its applicability, internal and external reproducibility and good performance.

A large number of oral diseases have no cure and their negative effects can exercise an influence over individual or collective wellbeing (6). Periodontal disease is quite prevalent (8) and is characterized by periodontal attachment loss, increase in probing depth, inflammation and destruction of periodontal tissues. These aspects lead to a series of signs and symptoms that can affect the quality of life of individuals (9). Thus, the aim of the present study was to administer the Portuguese version of the OHQoL-UK index in order to assess the impact of periodontitis on the quality of life and correlate this impact to socioeconomic/demographic variables.

Material and Methods

Sample

The sample was a group of patients enrolled for care at the Periodontic Clinic of the Undergraduate Course in Dentistry of the Universidade Federal de Pernambuco (UFPE), the Periodontic Specialization Clinic of the UFPE and the Periodontic Clinic at the Dental School of the Universidade de Pernambuco, located in the state of Pernambuco, northeastern region of Brazil. Three hundred two patients were selected by convenience. Patients were between 18 and 59 years of age, from both genders, had reading and writing skills, agreed to participate in the study and signed terms of informed consent. The diagnosis of chronic periodontitis was established in a second examination by specialists in periodontics

ma. Procjena se temeljila na klasifikaciji Američke parodontološke akademije (10). Prema toj ljestvici, kronični je parodontitis češći kod starijih, količina izgubljene kosti u skladu je s lokalnim karakteristikama, subgingivalni kamenac je čest nalaz, a bolest ima umjerenu do sporu progresiju. Kronični parodontitis može biti blag s gubitkom pričvrstka 1 do 2 mm, umjeren s gubitkom pričvrstka od 3 do 4 mm te težak s gubitkom pričvrstka od 5 i više mm.

Ovo istraživanje poduprlo je Etičko istraživačko povjerenstvo Centra za zdravstvene znanosti UFPE-a pod brojem 214/06.

Prikupljanje podataka

Za prikupljanje sociološko-ekonomskih i demografskih podataka pripremljen je bio obrazac sa sljedećim podacima: osobni prihod, prihod kućanstva, spol, dob, bračno stanje, izobrazba te dijagnoza parodontitisa.

Učinak parodontitisa na kvalitetu života mjerio se na temelju upitnika OHQoL-UK koji sadržava četiri elementa uključena u 16 pitanja povezanih s kvalitetom života. Pacijentima je bilo postavljeno sljedeće početno pitanje: „Kakav učinak imaju vaši zubi, zubno mesto, usta i/ili proteze na svako od 16 područja kvalitete života (na primjer, na ugodu, govor)?“ Anketirani su mogli birati jedan od pet odgovora s ocjenama: vrlo loš učinak (jedan bod), loš učinak (dva boda), bez učinka (tri boda), dobar učinak (četiri boda) i vrlo dobar učinak (pet bodova). Za izračun vrijednosti OHQoL-UK-a bodovi su se zbrajali za svako od 16 pitanja, pa je ukupna vrijednost bila od 16 do 80, s time da su niske vrijednosti upućivale na negativan učinak oralnog zdravlja na kvalitetu života.

Podaci su procijenjeni statistički deskriptivno i interferencijski, a rabili su se hi-kvadrat test i Fisherov egzaktan test (određen je bio 95-postotni interval pouzdanosti i 5-postotna razina znatnosti).

Rezultati

U ispitivanju su sudjelovali pacijenti u dobi od 18 do 59 godina (srednja dob $43,35 \pm 9,04$ godina) - u ukupnom broju bilo je 67,9% žena, 56% bilo je u

through records of periodontal parameters (clinical attachment level and probing depth) and periapical radiographs. Diagnoses were based on the classification of the American Academia of Periodontology (AAP) (10). According to the AAP (10), chronic periodontitis is more prevalent in adults; the amount of bone loss is compatible with local characteristics; subgingival calculus is a common finding; and the disease usually has slow to moderate progression. The degree of chronic periodontitis is classified as mild periodontitis, in which there is attachment loss of 1 to 2 mm; moderate periodontitis, when the attachment loss is 3 to 4 mm; and severe periodontitis, when attachment loss is 5 mm or more.

The present study protocol was submitted to and received approval from the Research Ethics Committee of the Center for Health Sciences of the Universidade Federal de Pernambuco under number 214/06.

Data collection

The form was administered for the assessment of socioeconomic and demographic variables, which included the following information: individual income, household income, gender, age, marital status, schooling and periodontitis diagnosis.

The impact of periodontitis on the quality of life was measured using the OHQoL-UK index, which is composed of four items containing 16 questions related to the quality of life. Through the OHQoL-UK, the patients were asked the following opening question: “What effect do your teeth, gums, mouth and/or dentures have on each of the 16 key areas of the quality of life? (for example: comfort, speaking).” Respondents were given five response options, which were assigned scores: very bad effect (1 point), bad effect (2 points), no effect (3 points), good effect (4 points) and very good effect (5 points). For the calculation of the OHQoL-UK score, the points were summed from each of the 16 questions, producing a total OHQoL-UK score ranging from 16 to 80, for which lower total OHQoL-UK scores denote a worse impact of oral health on the quality of life.

Data were assessed through descriptive and inferential statistics, using the chi-square test and Fisher's exact test, adopting a 95% confidence interval and a 5% level of significance.

Results

The sample was made up of patients between 18 and 59 years of age (mean age 43.35 ± 9.04 years), 67.9% of whom were women, 56% were married

braku, a 33,3% završilo je srednju školu, Tablica 1. Kad je riječ o parodontalnoj dijagnozi, 31,5% imalo je blagi kronični parodontitis, 26,2% imalo je umjeren kronični parodontitis, a 42,4% težak kronični parodontitis. U procjenjivanju vrste parodontitisa prema sociološko-ekonomskim/demografskim varijablama, statistički je razlika bila velika u odnosu prema dobi: 47,5% ispitanika s teškim kroničnim parodontitisom bilo je u dobnoj skupini od 50 do 59 godina, Tablica 2.

Na Tablici 3. su aspekti koji se ispituju OHQoL-UK-om, te se ističu najviši postotci varijabli koje nose najlošiji učinak: izgled (18,9%), osmijeh (18,5%) te ugodu (16,6%). Među elementima s lošim učinkom, najveći postotak imala je briga. Najviše frekvencije elemenata koji nemaju učinak su osobnost (58,6%), san (50,3%) te ljubav (49,7%).

Tablica 4. prikazuje da, ako se aspekti OHQoL-UK-a usporede s različitim stupnjevima parodontalne bolesti, postoje statistički znatne razlike u odnosu prema hranjenju, izgledu, općem zdravlju, osmijehu

and 33.3% had a complete high school education, Table 1. Regarding the periodontal diagnosis, 31.5% had mild chronic periodontitis, 26.2% had moderate chronic periodontitis and 42.4% had severe chronic periodontitis. When assessing the type of periodontitis according to the socioeconomic/demographic variables, a statistically significant difference was found with regard to age; 47.5% of those with severe chronic periodontitis were between 50 and 59 years of age, Table 2.

Table 3 displays aspects addressed in the OHQoL-UK index, highlighting the highest percentages for variables described as having a very bad effect: appearance (18.9%), smiling (18.5%) and comfort (16.6%). Among the items most described as having a bad effect, worry achieved the highest percentage. The highest frequencies of items assessed as having no effect corresponded to personality (58.6%), sleep (50.3%) and love (49.7%).

Table 4 shows that, when the aspects of the OHQoL-UK index were compared to the different

Tablica 1. Karakterizacija uzorka

Table 1 Characterization of the sample

Variables	n	%
Age group/dobna skupina		
18 do 29 • from 18 to 29	25	8.3
30 do 49 • from 30 to 49	197	65.2
50 do 59 • from 50 to 59	80	26.5
Gender/spol		
Male/muškarci	97	32.1
Female/žene	205	67.9
Marital status/bračno stanje		
Single/slobodni	103	34.1
Married/u braku	169	56.0
Divorced/rastavljeni	24	7.9
Widowed/udovci/udovice	6	2.0
Schooling/školovanje		
Elementary education or less/osnovno ili još niže obrazovanje	117	38.7
Incomplete/complete high school education/nezavršena/završena srednja škola	138	45.7
Incomplete/complete upper education/postgraduate education/nezavršen/završen fakultet, poslijediplomski studij	47	15.6
Individual income (based on minimum monthly salary)/prihodi na temelju mjesečne zarade		
1 minimum salary or less/1 minimalna plaća ili manja	140	46.4
1 to 2 times the minimum salary/1-2 minimalne plaće	51	16.9
More than 2 times the minimum salary/više od 2 minimalne plaće	32	10.6
Not informed/bez informacija	79	26.2
Household income (based on minimum monthly salary)/prihodi kućanstva		
1 minimum salary or less/1 minimalna plaća ili manja	63	20.9
1 to 2 times the minimum salary/1-2 minimalne plaće	65	21.5
More than 2 times the minimum salary/više od 2 minimalne plaće	82	27.2
Not informed/bez informacija	92	30.5
TOTAL/UKUPNO	302	100.0

Tablica 2. Procjena vrste parodontitisa prema dobnoj skupini, spolu, bračnom stanju i obrazovanju
Table 2 Assessment of type of periodontitis according to age group, gender, marital status and schooling

Variable/varijabla	Mild		Moderate		Severe		p value
	n	%	n	%	N	%	
Age group/dobna skupina							
18 do 29	19	76	5	20	1	4	p ⁽¹⁾ <0.001*
30 do 49	60	30.5	48	24.4	89	45.2	
50 do 59	16	20	26	32.5	38	47.5	
Gender/spol							
Male/muškarci	25	25.8	29	29.9	43	44.3	p ⁽¹⁾ = 0.306
Female/žene	70	34.1	50	24.4	85	41.5	
Marital status/bračno stanje							
Single/slobodni	36	35	23	22.3	44	42.7	p ⁽²⁾ = 0.503
Married/u braku	48	28.4	50	29.6	71	42	
Divorced/rastavljeni	8	33.3	4	16.7	12	50	
Widowed/udovci/udovice	3	50	2	33.3	1	16.7	
Schooling /školovanje							
Elementary education or less/osnovna škola ili još manje	40	34.2	30	25.6	47	40.2	p ⁽¹⁾ = 0.401
Incomplete / complete high school/završena ili nezavršena srednja škola	46	33.3	34	24.6	58	42	
Incomplete/complete upper education / postgraduate education/završen ili nezavršen studij ili poslijediplomski studij	9	19.1	15	31.9	23	48.9	
Group Total/ukupno skupina	302 (100%)						

(*): Significant association to 5.0%/ znatnost do 5%

(1): Pearson's chi-square test/Pearsonov hi-kvadrat test

(2): Fisher's exact test/Fisherov egzaktni test

Tablica 3. Distribucija ispitanika prema varijablama OHQoL-UK-a
Table 3 Distribution of participants with regard to variables on the OHQoL-UK index

OHQoL- UK	1. Very bad/ Veoma loše n (%)	2. Bad/Loše n (%)	3. No effect/Ne utječe n (%)	4. Good/Dobro n (%)	5. Very good/ Veoma dobro n (%)
Symptom/simptom					
Comfort/ugoda	50 (16.6)	108 (35.8)	78 (25.8)	51 (16.9)	15 (5.0)
Bad breath/zadah	37 (12.3)	122 (40.4)	83 (27.5)	51 (16.9)	9 (3.0)
Physical aspects/fizički aspekti					
Eating/hrana	39 (12.9)	83 (27.5)	76 (25.2)	93 (30.8)	11 (3.6)
Appearance/izgled	57 (18.9)	114 (37.7)	46 (15.2)	79 (26.2)	6 (2.0)
General health/opće zdravlje	28 (9.3)	84 (27.8)	104 (34.4)	67 (22.2)	19 (6.3)
Speaking/govor	20 (6.6)	84 (27.8)	121 (40.1)	60 (19.9)	17 (5.6)
Smiling/osmijeh	56 (18.5)	123 (40.7)	40 (13.2)	70 (23.2)	13 (4.3)
Psychological aspects/psihološki aspekti					
Sleep/spavanje	23 (7.6)	56 (18.5)	152 (50.3)	56 (18.5)	15 (5.0)
Confidence/sigurnosti	22 (7.3)	88 (29.1)	107 (35.4)	70 (23.2)	15 (5.0)
Mood/raspoloženje	15 (5.0)	99 (32.8)	123 (40.7)	49 (16.2)	16 (5.3)
Worry/brige	36 (11.9)	141 (46.7)	83 (27.5)	37 (12.3)	5 (1.7)
Personality/osobnost	9 (3.0)	66 (21.9)	177 (58.6)	38 (12.6)	12 (4.0)
Social aspects/socijalni aspekti					
Work/posao	26 (8.6)	84 (27.8)	144 (47.7)	34 (11.3)	14 (4.6)
Social life/društveni i život	29 (9.6)	98 (32.5)	121 (40.1)	41 (13.6)	13 (4.3)
Finances/financije	31 (10.3)	92 (30.5)	140 (46.4)	32 (10.6)	7 (2.3)
Love/ljubav	21 (7.0)	74 (24.5)	150 (49.7)	37 (12.3)	20 (6.6)
TOTAL/UKUPNO	302 (100.0)				

Tablica 4. Procjena varijabli OHQoL-UK-a s obzirom na stupanj parodontitisa

Table 4 Assessment of variables on the OHQoL-UK index according to degree of periodontitis

Variable/varijabla	Mild/blagi		Moderate/umjerenai		Severe/teški		Group total/ukupno skupina		p value/vrijednost
	n	%	n	%	n	%	n	%	
Eating/hrana									
Very bad/vrlo loše	8	8.4	7	8.9	24	18.8	39	12.9	p ⁽¹⁾ = 0.002*
Bad/loše	20	21.1	24	30.4	39	30.5	83	27.5	
No effect/ne utječe	21	22.1	30	38	25	19.5	76	25.2	
Good effect/dobro	41	43.2	15	19	37	28.9	93	30.8	
Very good/vrlo dobro	5	5.3	3	3.8	3	2.3	11	3.6	
Appearance/izgled									
Very bad/vrlo loše	10	10.5	13	16.5	34	26.6	57	18.9	p ⁽¹⁾ = 0.004*
Bad/loše	32	33.7	36	45.6	46	35.9	114	37.7	
No effect/ne utječe	14	14.7	14	17.7	18	14.1	46	15.2	
Good effect/dobro	38	40	13	16.5	28	21.9	79	26.2	
Very good/vrlo dobro	1	1.1	3	3.8	2	1.6	6	2.0	
General health/opće zdravlje									
Very bad/vrlo loše	4	4.2	7	8.9	17	13.3	28	9.3	p ⁽¹⁾ < 0.001*
Bad/loše	18	18.9	16	20.3	50	39.1	84	27.8	
No effect/ne utječe	29	30.5	33	41.8	42	32.8	104	34.4	
Good effect/dobro	34	35.8	20	25.3	13	10.2	67	22.2	
Very good/vrlo dobro	10	10.5	3	1.0	6	4.7	19	6.3	
Smiling/osmijeh									
Very bad/vrlo loše	11	11.6	13	16.5	32	25	56	18.5	p ⁽¹⁾ = 0.017*
Bad/loše	37	38.9	37	46.8	49	38.3	123	40.7	
No effect/ne utječe	8	8.4	11	13.9	21	16.4	40	13.2	
Good effect/dobro	33	34.7	15	19	22	17.2	70	23.2	
Very good/vrlo dobro	6	6.3	3	3.8	4	3.1	13	4.3	
Finance/financije									
Very bad/vrlo loše	3	3.2	7	8.9	21	16.4	31	10.3	p ⁽¹⁾ = 0.009*
Bad/loše	24	25.3	33	41.8	35	27.3	92	30.5	
No effect/ne utječe	52	54.7	29	36.7	59	46.1	140	46.4	
Good effect/dobro	12	12.6	8	10.1	12	9.4	32	10.6	
Very good/vrlo dobro	4	4.2	2	2.5	1	0.8	7	2.3	

(*): Significant association to 5,0%/znatnost do 5%

(1): Pearson's chi-square test/Pearsonov hi-kvadrat test

i financijama. Istaknimo da je 26,6% pacijenata s teškim kroničnim parodontitisom odmah spomenulo vrlo loš učinak na izgled, a 39,1% navelo je loš utjecaj na opće zdravlje.

Usporedba ukupnog iznosa OHQoL-UK-a s parodontalnom dijagnozom - većina pacijenata s niskim vrijednostima imala je težak kronični parodontitis (Tablica 5.). No, povezivanje ukupne vrijednosti OHQoL-UK sa sociološko-ekonomskim/demografskim varijablama pokazalo je da samo spol i prihod kućanstva pokazuju statistički znatne razlike (Tablica 6.).

degrees of periodontal disease, there were statistically significant differences regarding eating, appearance, general health, smiling and financial life. 26.6% of the patients with severe chronic periodontitis reported a very bad effect on appearance and 39.1% reported a bad effect on general health.

When the total OHQoL-UK score was related to the periodontal diagnosis, most patients with low scores had severe chronic periodontal disease (Table 5). However, when the total OHQoL-UK score was associated to socioeconomic/demographic variables, only gender and household income presented statistically significant differences (Table 6).

Tablica 5. Procjena vrijednosti prema dijagnozi parodontitisa

Table 5 Assessment of scores according to periodontitis diagnosis.

Periodontitis/parodontitis	Score/Vrijednost						p value/ vrijednost	OR (CI 95%)
	Low/niskaa		High/visoka		TOTAL/ UKUPNO			
	n	%	N	%	n	%		
Mild/blag	34	35.8	61	64.2	95	100.0	p ⁽¹⁾ < 0.001 *	1.00
Moderate/umjeren	43	54.4	36	45.6	79	100.0		2.14 (1.16-3.94)
Severe/težak	80	62.5	48	37.5	128	100.0		2.99 (1.72-5.19)
Group total/Ukupno skupina	157	52	145	48	302	100.0		

(*) : Significant association to 5.0%/znatnost do 5%

(1): Pearson's chi-square test/Pearsonov hi-kvadrat test

Tablica 6. Procjena vrijednosti prema dobnoj skupini, spolu, bračnom stanju i izobrazbi

Table 6 Assessment of scores according to age group, gender, marital status and schooling

variable	Score/vrijednost						p value/ vrijednost	OR (CI 95%)
	Low/Niska		High/Visoka		TOTAL/ UKUPNO			
	n	%	N	%	n	%		
Age group/dobna skupina								
18 do 29	13	52	12	48	25	100.0	p ⁽¹⁾ = 0.815	1.00
30 do 49	100	50.8	97	49.2	197	100.0		0.95 (0.1-2.19)
50 do 59	44	55	36	45	80	100.0		1.12 (0.46-2.77)
Gender/spol								
Male/muškarci	41	42.3	56	57.7	97	100.0	p ⁽¹⁾ = 0.20*	1.00
Female/žene	116	56.6	89	43.	205	100.0		1.78 (1.9-2.90)
Marital status/bračno stanje								
Single/slobodni	56	54.4	47	45.6	103	100.	p ⁽¹⁾ = 0.453	1.00
Married/u braku	82	48.5	87	51.	169	100.0		0.9 (0.48-1.29)
Divorced/rastavljeni	15	62.	9	37.5	24	100.0		1.40 (0.56-3.48)
Widowed/udovci/udovice	4	66.7	2	33.3	6	100.0		1.8 (0.29-9.57)
Schooling/školovanje								
Elementary education or less/osnovna škola ili još manje	62	53	55	47	117	100.0	p ⁽¹⁾ = 0.701	1.8 (0.65-2.2)
Incomplete /complete high school education/ završena ili nezavršena srednja škola	73	52.9	65	47.	138	100.0		1.28 (0.66-2.48)
Incomplete/complete upper education/ postgraduate education/završen ili nezavršen studij/poslijediplomski studij	22	46.8	25	53.2	47	100.0		1.00
Individual income (based on minimum salary)/pojedinačni prihod (na temelju minimalne plaće)								
1 minimum salary or less/1 minimalna plaća ili manja	75	53.6	65	46.	140	100.0	p ⁽¹⁾ = 0.509	1.48 (0.68-3.21)
1 to 2 times the minimum salary/1-2 minimalne plaće	24	47.1	27	52.9	51	100.0		1.4 (0.47-2.78)
More than 2 times the minimum salary/više od 2 minimalne plaće	14	43.8	18	56.	32	100.0		1.00
Household income (based on minimum salary)/prihod kućanstva (na temelju minimalne plaće)								
1 minimum salary or less/1 minimalna plaća ili manja	41	65.1	22	34.	63	100.0	p ⁽¹⁾ = 0.020*	2.50 (1.27-4.93)
1 to 2 times the minimum salary/1-2 minimalne plaće	30	46.2	35	53.8	65	100.0		1.15 (0.60-2.22)
More than 2 times the minimum salary/više od 2 minimalne plaće	35	42.7	47	57.3	82	100.0		1.00

(*) : Significant association to 5.0%/znatnost do 5%

(1): Pearson's chi-square test/Pearsonov hi-kvadrat test

Rasprava

U ovom istraživanju parodontalna je bolest negativno utjecala na kvalitetu života oboljelih, što je već bilo uočeno u nizu studija (11-15). Negativne posljedice bile su veće kod težih slučajeva u odnosu prema manje teškim stupnjevima parodontitisa.

Loureiro i suradnici (12) istaknuli su da teži slučajevi parodontalne bolesti imaju veći negativan učinak na kvalitetu života djece s Downovim sindromom (DS-om). No, autori su uspoređivali samo gingivitis te umjeren i težak parodontitis, a nije bilo dijagnoza agresivnog i kroničnog parodontitisa. Osim toga, razvijen je indeks kvalitete života na temelju OHIP-a 14 koji nije ocijenjen, a podijeljen je majkama djece s DS-om te ne mora biti u cijelosti u skladu sa samopercepcijom utjecaja parodontalne bolesti na kvalitetu života tih pacijenata. Naše se istraživanje koristilo dijagnozom na temelju klasifikacije AAP-a (10) i isključilo je sve slučajeve agresivnog parodontitisa sa znatno drugačijim tijekom od kronične bolesti. Učinak parodontitisa analizirali su oboljeli pojedinci, što isključuje mišljenje drugih osoba te pokazuje samopercepciju učinka bolesti.

Needleman i suradnici (14) dokazali su da je OHQoL-UK jako osjetljiv u mjerenju parodontalne bolesti, jer kombinira kliničke karakteristike i samopercepciju pacijenata, budući da su pacijenti u tom istraživanju s dubinom sondiranja od 5 i više milimetara imali niske vrijednosti OHQoL-UK-a. Autori također tvrde da pacijenti u fazi održavanja postižu bolju kvalitetu života u odnosu prema onima s neliječenom parodontalnom bolesti. U naše istraživanje bili su uključeni pacijenti u različitim fazama terapije, što je moglo zbuniti u slučaju povezanosti stupnja parodontitisa i ukupne vrijednosti OHQoL-UK-a.

Učinak oralnog zdravlja na kvalitetu života među pacijentima s parodontitisom bio je znatan kad je riječ o fizičkim aspektima (jedenje, izgled, opće zdravlje, osmijeh) te socijalnim (financije). U ostalim studijama također je opisana percepcija učinka na fizičke aspekte (13,14). No, ti su rezultati možda bili pod utjecajem sociološko-ekonomskih/demografskih varijabli, kao što su spol, prihod i izobrazba, a smatra se da su čimbenici koji zbunjuju u nizu istraživanja (13,16). Naše istraživanje pokazalo je veliku razliku u odnosu prema spolu i prihodu, a to je bilo uočeno i u ostalima (13,17).

Analiza korelacije između sociološko-ekonomskih/demografskih varijabli i dijagnoze parodontalne bolesti pokazala je statistički veliku razliku kad je riječ o dobi. To ne spominju Nicolau i njegovi su-

Discussion

In the present study, periodontal disease had negative consequences on the quality of life of affected individuals, as has been observed in a number of other studies (11-15). The negative repercussions were greater among more severe cases when compared to less severe degrees of periodontitis.

Loureiro et al. (12) found that more severe degrees of periodontal disease had a greater negative impact on the quality of life of children with Down's syndrome (DS); however, the authors only compared gingivitis, moderate periodontitis and severe periodontitis, with no diagnoses of chronic and aggressive periodontitis. Furthermore, a non-validated quality of life index was developed based on the OHIP-14, having been administered to the mothers of children with DS, which may not entirely correspond to the self-perception of the impact of periodontal disease on the quality of life in these patients. In the present study, the diagnosis of periodontal disease was established according to the classification of the AAP (10), excluding all cases of aggressive periodontitis, which exhibits a quite distinct behavior from the chronic disease. The impact of periodontitis analyzed in the present study was reported by the affected individuals themselves, thereby excluding opinions from individuals other than the affected individuals regarding their self-perception of the impact of the disease.

Needleman et al. (14) found that the OHQoL-UK index exhibited sufficient sensitivity for measuring periodontal health, corroborating both observed clinical characteristics and the self-perception of patients, as patients in their study with a number of teeth with probing depths equal to or are greater than 5 mm achieved low OHQoL-UK scores. The authors also state that patients in the maintenance phase achieve higher quality of life scores when compared to individuals with untreated periodontal disease. In the present study, the patients were in different phases of treatment, which may have contributed a confounding factor when correlating the degrees of periodontitis to the total OHQoL-UK score.

The impact of oral health on the quality of life among patients with periodontitis was quite significant with regard to physical aspects (eating, appearance, general health, smiling) and social aspects (finances). Other studies have also reported a perception of impact on physical aspects (13, 14); however, these results may have been influenced by socioeconomic/demographic variables, such as gender, income and schooling, which are considered

radnici (18), no istaknuli su povezanost između gubitka kliničkog pričvrstka i razine obrazovanja roditelja ispitanika.

Iako je u mnogim istraživanjima potvrđeno da parodontalna bolest negativno djeluje na kvalitetu života pacijenata (11-15), što potvrđuje i naše istraživanje, ispitanici su mogli imati i neke druge oralne bolesti koje negativno djeluju na kvalitetu života, kao što su karijes, malokluzija, gubitak zuba te nekorištenje protetskih nadomjestaka (19-24). Osim toga, uzorak iz našeg istraživanja činile su parodontalno kompromitirane osobe koje su tražile liječenje u specijalističkoj parodontološkoj klinici, a za usporedbu nije bilo kontrolne skupine sa zdravim ispitanicima.

U istraživanjima utjecaja oralnog zdravlja na kvalitetu života koristimo se mnogim indeksima kvalitete života, na primjer OHIP-om, OHIP-om 14 te OHQoL-UK-om. No, da bi se odredilo kako parodontitis negativno utječe na kvalitetu života, potrebno je koristiti se indeksom kojim se mjere i negativni i pozitivni utjecaji oralnog zdravlja na kvalitetu života. U našem se istraživanju OHQoL-UK rabio upravo za to, što nije moguće u istraživanjima koja se koriste OHIP-om (16).

Zaključak

U sklopu našeg istraživanja može se zaključiti da parodontitis utječe na kvalitetu života, a najnegativniji aspekti bili su identificirani kod pacijenata s teškim kroničnim parodontitisom. Kad je riječ o sociološko-ekonomskim/demografskim varijablama na učinak na kvalitetu života, zabilježene su bile statistički velike razlike kod spolova i prihoda kućanstava.

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confounding factors by a number of authors (13, 16). In the present study, when the total OHQoL-UK score was related to socioeconomic/demographic variables, there was a significant difference with regard to gender and income, which has also been observed by other authors (13, 17).

When analyzing the correlation between socioeconomic/demographic variables and the diagnosis of periodontal disease, there was a statistically significant difference with regard to age. This difference was not observed in the study conducted by Nicolau et al. (18), in which a correlation was demonstrated between clinical attachment loss and level of schooling of the participants' parents.

Although a number of studies have affirmed that periodontal disease has a negative impact on the quality of life of patients (11-15), including the present study as well, the participants in these studies could have other oral cavity diseases that may also have negative effects on quality of life, such as caries, malocclusions, tooth loss and the use or non-use of dentures (19-24). Moreover, the sample in the present study as well as the sample in the study conducted by Needleman et al. (14) consisted of periodontally compromised patients who sought treatment in a specialized periodontic clinic, with no control group of periodontally healthy patients for the comparison of results between the groups.

A number of quality of life indices have been used in studies on the impact of oral health on the quality of life, such as the OHIP, OHIP-14 and OHQoL-UK. However, to determine how periodontitis can negatively influence quality of life, it is necessary that the index used measure both positive and negative aspects of the impact of oral health on the quality of life. In the present study, the OHQoL-UK index was used to address both these aspects, which was not possible in studies carried out using the OHIP (16).

Conclusion

Thus, within the limits of the present study, it was concluded that periodontitis had an impact on quality of life and the most prevalent negative aspects were found in patients with severe chronic periodontitis. Regarding the effect of socioeconomic/demographic variables on the impact on the quality of life, there were statistically significant differences with regard to gender and household income.

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Abstract

Aim: A number of quality of life indexes have been used in studies on the impact of oral health on the quality of life. The aim of the present study was to assess the relationship between periodontitis and quality of life in a convenience sample of patients with periodontitis. **Material and Method:** Three hundred two patients diagnosed with mild, moderate and severe chronic periodontitis responded to a questionnaire drafted to evaluate socioeconomic variables (age, gender, schooling, marital status and income) and to the United Kingdom Oral Health-Related Quality of Life (OHQoL-UK) index to assess the impact of periodontitis on the quality of life. **Results:** There was considerable impact from periodontitis on the quality of life, with statistically significant differences recorded for eating, appearance, general health, smiling and socioeconomic status. OHQoL-UK scores were associated to gender and household income ($p < 0.05$). A statistically significant association was found between the degree of periodontitis and OHQoL-UK scores ($p < 0.05$), with lower levels of quality of life more prevalent among individuals with severe chronic periodontitis. **Conclusion:** The present study on the impact of periodontitis on the quality of life revealed that negative aspects were more prevalent among individuals with severe chronic periodontitis, demonstrating the self-perception of patients regarding the health of periodontal tissues.

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Address for correspondence

Prof. Renata Cimões
Department of Prosthesis and Oral and Facial Surgery
Federal University of Pernambuco
Rua Guedes Pereira 114/302, Casa Amarela,
Recife-PE, Brazil. 52060-150.
Tel/fax: (55) 81 33047292
renata.cimoes@globo.com

Key words

Oral health; Quality of life; Periodontal diseases; Periodontitis.

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