

Utjecaj duševnih čimbenika na pojavu simptoma suhoće i pečenja u ustima

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Sažetak

Ispitivanje je provedeno da bi se ispitalo postojanje simptoma suhoće i pečenja u ustima u bolesnika na području Fužina i Lokava u Gorskom kotaru te istražio odnos tih oralnih promjena prema stupnju samopoštovanja, anksioznosti i neurotizma u tih ispitanika. Ispitni uzorak tvorili su 277 slučajno odabranih punoljetnih pacijenata. Kod svih je obavljen potanki oralni pregled i odgovarajuća oralna testiranja. Svaki je bolesnik zamoljen da ispuni za tu namjenu već pripremljen psihotest, koji je napravljen od subtestova "18 PF" Momirovića i suradnika. Rezultati su pokazali da se simptomi jake suhoće u ustima pojavljuju u 12,27% ispitanika, u 7,58% ispitanika u slabijem obliku, a simptomi pečenja u ustima u 10,3% ispitanika. Nastanak simptoma suhoće i pečenja međusobno su statistički povezani. Rezultati psihotestova pokazuju da u ovom ispitnom uzorku postoje tendencije prema visokim stupnjevima samopoštovanja, niskim stupnjevima anksioznosti i još nižim stupnjevima neurotizma. Ispitivanje je potvrdilo pozitivnu znatnu statističku povezanost između anksioznosti, neurotizma i oralnih simptoma. Povezanost prema različitim intezitetima samopoštovanja nije pronađena.

Ključne riječi: *xerostomia, stomatopyrosis, samopoštovanje, anksioznost, neurotizam*

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Uvod

Oralne bolesti s psihosomatskom etiologijom još uvijek nisu dovoljno potvrđena i ispitana podskupina psihosomatskih bolesti koje su u medicini odavno poznate (1). Mnoge od njih za koje smatramo da su psihosomatskoga značaja do danas nemaju dovoljno objašnjenu etiologiju ili se smatra da je ona višezročna (2).

U praktičnome radu stomatolozi često susreću bolesnike koji pokazuju znakove raznih duševnih smetnji, pa se zato može reći da je stomatološka ordinacija mjesto gdje se, nedvojbeno je, mogu susresti povećana tjeskoba, strah i drugi oblici neurotičnosti (3,4,5,6,7).

S obzirom na te činjenice, nameće se razmišljanje u kakvu su međusobnom odnosu oralno i duševno zdravlje, posebno postoje li dugotrajne ne-

ativne duševne promjene i neke crte ličnosti koje mogu psihosomatskim mehanizmima utjecati na ralnu sluznicu (8,9).

Za oralne simptome suhoće i pečenja često se znanstvenim radovima predmnijeva da su znatno povezani sa stresom i raznim oblicima neurotizma (10,11,12,13,14).

Osim što se je tražila potvrda za dosadašnje rezultate za neurotizam i anksioznost (15,16,17), u ovom se radu proširuje interes prema pojmu samopoštovanja kao stanju kojega intenzitet, prema alazima u psihološkoj literaturi, znatno određuje onašanje svakog ispitnog uzorka (18,19). Psihološke kategorije anksioznosti i neurotizma dobro su znane našim liječnicima praktičarima koji se s njima gotovo danomice sureću u svojem radu.

Pojam samopoštovanja manje je poznat i odanran je zbog njegove sve veće važnosti u modernim psihološkim ispitivanjima. Radi se o pojmu koji je sastavnica Rogersove teorije ličnosti, a tvorega konativni čimbenici koji utječu na oblike ljudskog ponašanja (20). Ta psihološka kategorija uvedena je u ovo ispitivanje s namjerom da se dokaže neizbežna povezanost s promatranim oralnim promjenama. Nastanak oralnih simptoma suhoće usta i pečenja na koje utječu duševne osobine nije do sada u Gorskom kotaru pobuđivao osobito zanimanje. Budući da nema nekog prethodnog istraživanja koje bi dalo osnovne pokazatelje o nastanku tih simptoma u spomenutom području, bilo je posebno u prvome dijelu ispitivanja saznati osnovne podatke o čestoći navedenih promjena na tome području i o njihovoj rasprostranjenosti među ljudima različite dobi i spola. Osim toga, bilo je važnorediti kakav je stupanj samopoštovanja, te intenzitet anksioznosti i neurotizma u istom ispitnom uzorku te kakva je povezanost oralnih i duševnih promjena. Na osnovi rezultata toga dijela ispitivanja željelo se ustanoviti stvara li se u slučaju promjena duševnoga statusa naših pacijenata, u smislu povećane anksioznosti i neurotizma i smanjena samopoštovanja, određena predispozicija za promatranane oralne simptome.

Ispitanici i postupci

U ovo ispitivanje bilo je uključeno 277 slučajeva odabranih punoljetnih ispitanika koji žive u li-

ječje se u stomatološkim ordinacijama u dvjema gorskim općinama, i to u Općini Fužine 155 (55,9%) i Općini Lokve 122 (44,1%).

S obzirom na spol, bilo je 150 žena (54%) i 127 (45%) muškaraca. Raspon životne dobi bio je od 18 do 77 godina. Srednja starosna vrijednost bila je za sve ispitanike 38,6 godina (37,5 godina žene; 39,9 godina muškarci). Prema dobi naši su ispitanici bili podijeljeni na mlađu skupinu (od 18 do 49 godina) i na stariju skupinu (od 50 do 77 godina). Bolesnici koji uzimaju psihotropne lijekove i boluju od duševnih bolesti bili su izuzeti iz ispitnog uzorka. Prema pripremljenom upitnom arku za svakog su ispitanika prikupljeni osnovni podatci i obavljen je potanki oralni pregled.

Kod utvrđivanja smanjenoga lučenja sline, bio je primijenjen najprije test Vitroadhezije (VitroAD-test), a ako je bio pozitivan, proveden je i test salivacije (Sal-test) prema Dobreniću (2) koji se je izvodio skupljanjem sline s pomoću injekcijske štrcaljke, tijekom jedne minute. Prema sljedećoj tablici, bolesnici su podijeljeni u kategorije:

1. od 0,4 do 0,5 ml/min = normalna salivacija
2. od 0,2 do 0,4 ml/min = oligosialija
3. manje od 0,2 ml/min = kserostomija

Intenzitet piroza izražen je također u tri stupnja:

1. Pečenje slabog intenziteta ne javlja se spontano nego nakon podražaja.
2. Pečenje se javlja spontano, intermitentnog je karaktera, pojačava se na podražaj.
3. Neprekidno traje, nakon podražaja se pojačava.

Pošto je evidentiran oralni nalaz, proveo se je psihološki dio ispitivanja u kojem su ispitanici ispunjavali za tu priliku posebno odabrane subtestove cjeline "18 PF" Momirovića i suradnika (21). Njihova psihometrijska svojstva omogućila su ispitati tendencije ispitnog uzorka prema samopoštovanju, anksioznosti i neurotizmu. Prema rezultatima na pojedinom subtestu ispitanike smo svrstali u tri intenziteta (slabi, srednji i jaki), koja smo dobili ravnomjernom podjelom raspona od minimalne do maksimalne vrijednosti svih rezultata na jednome subtestu.

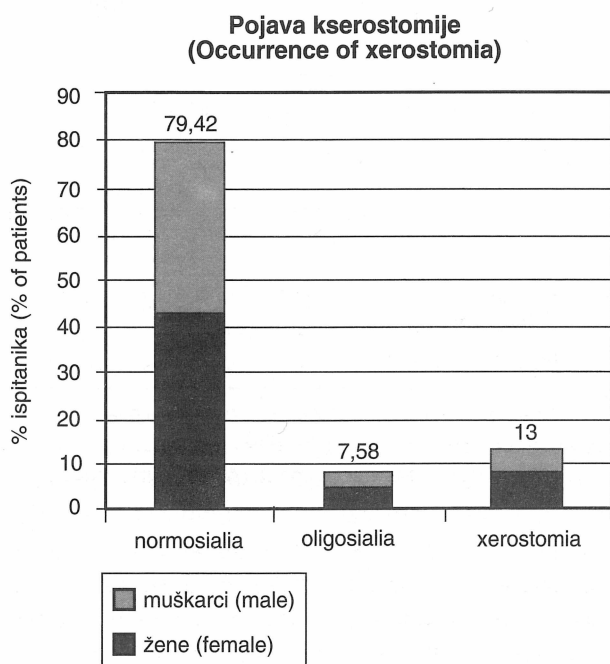
Podatci dobiveni evidentiranjem oralnih simptoma i duševnih čimbenika pripremljeni su za statističku obradu. Očekivane razlike s obzirom na spol ispitanika testirane su uz pomoć χ^2 testa. Ispitujući odnos između oralnih promjena i psiholoških osobina, služili smo se metodom raščlambe varijance (ANOVA). Tom metodom se određivala povezanost između distribucije rezultata na psihotestovima, podijeljenih u tri intenziteta, i distribucije oralnih simptoma u cijelome uzorku.

Rezultati

Simptomi kserostomije zabilježeni su u 19, 77% naših ispitanika, a simptomi stomatopiroze pronađeni su u 10,3% ispitanika. Rezultati pokazuju da su te dvije pojave pozitivno statistički znatno povezane (koef. korelacije = 0,36903).

Rezultati pojave simptoma kserostomije zabilježeni su kao postoci od ukupnoga broja ispitanika (Slika 1).

Prema tim rezultatima vidljivo je da je velik dio ispitanika imao sasvim urednu salivaciju

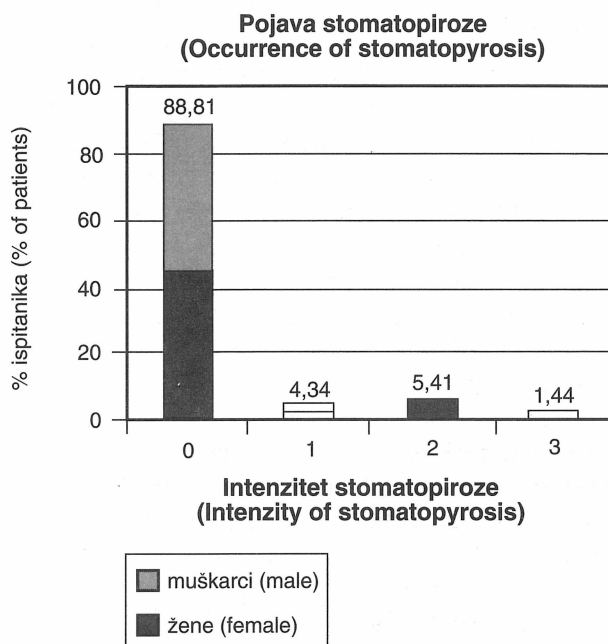


Slika 1. Pojava simptoma kserostomije s obzirom na intenzitet i spol ispitanika

Figure 1. Occurrence of symptoms of xerostomia with regard to intensity and sex of subjects

(79,42%) a u malog je dijela pronađen smanjen intenzitet protoka sline (7,5%) ili sasvim izrazit nedostatak sline (12,27%). S obzirom na odnos spolova testiranog uz pomoć χ^2 testa, utvrdilo se je da ne postoji statistički značajna razlika u pojavi tih promjena između muških i ženskih ispitanika ($\chi^2 = 2,423$; $p = 0,493$; $ss = 2$).

Čestoća stomatopiroza bila je evidentirana u tri prije definirana intenziteta koji su prikazani na apscisi grafičkoga prikaza na Slici 2. Na ordinati su označeni postotci ukupnoga broja ispitanika.

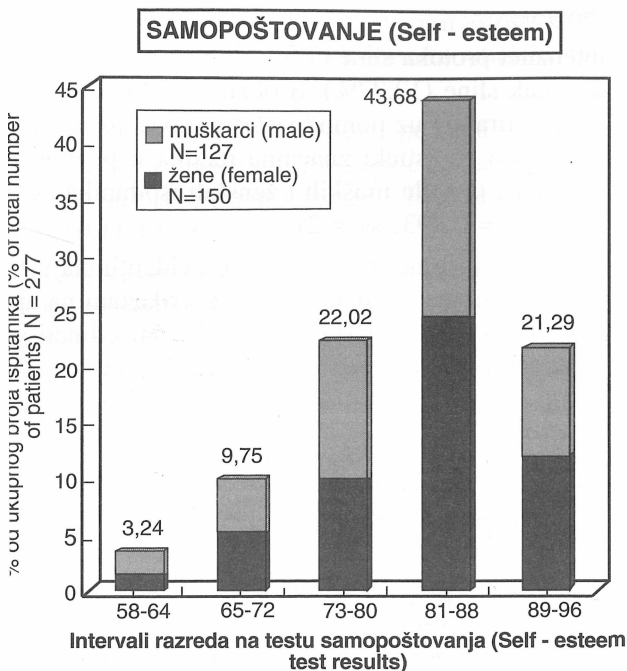


Slika 2. Pojava simptoma stomatopiroze s obzirom na intenzitet i spol ispitanika

Figure 2. Occurrence of symptoms of stomatopyrosis with regard to intensity and sex of subjects

U najvećeg dijela ispitanika nisu utvrđene te oralne smetnje (88,8 %). U bolesnika koji su imali osjećaj pečenja u ustima, najveći je bio broj onih čiji su simptomi bili srednjeg intenziteta (5,4 %), dok je manje bilo piroza slabijeg intenziteta (4,3%) i izrazito jakih smetnji (1,5 %). U vezi s pojavom tih promjena u ispitanika različita spola, opažena je znatna statistička razlika, provjerena χ^2 testom, što se tiče jače pojave piroza u žena ($\chi^2=10,91$; $p=0,015$; $ss = 3$).

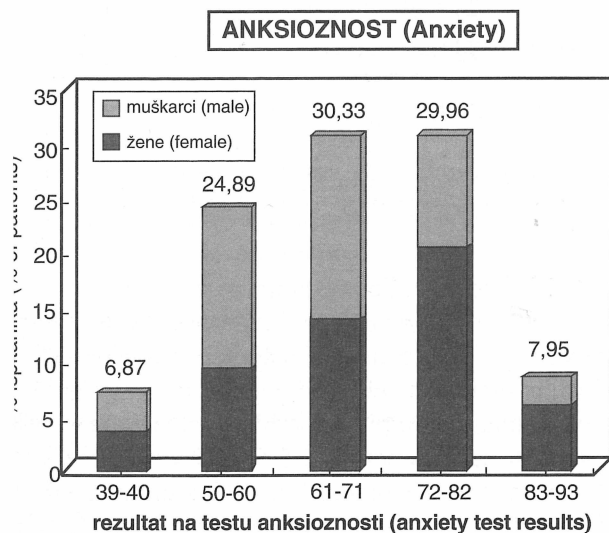
Rezultati psihotestova prikazani su na Slikama 3, 4 i 5. Kako bi se lakše prikazivala i pratila di-



Slika 3. Rezultati na testu samopoštovanja s obzirom na spol ispitanika

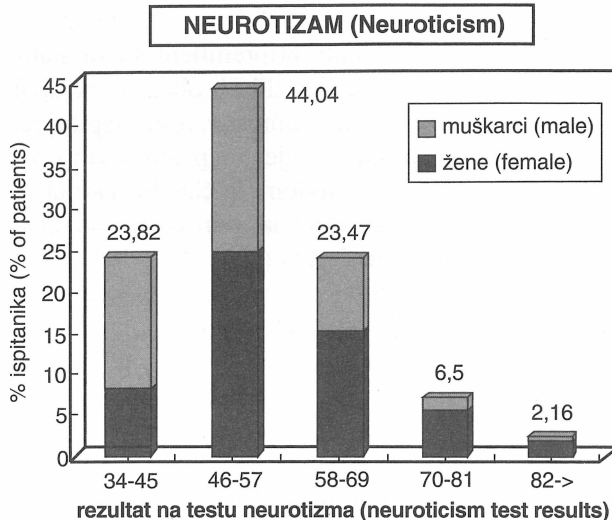
Figure 3. Achievement on the test of self-esteem with regard to the sex of subjects

tribucija rezultata, razmak između minimalne i maksimalne vrijednosti postignute na pojedinom testu podijeljen je na pet jednakih intervala i tako



Slika 4. Rezultati na testu anksioznosti s obzirom na spol ispitanika

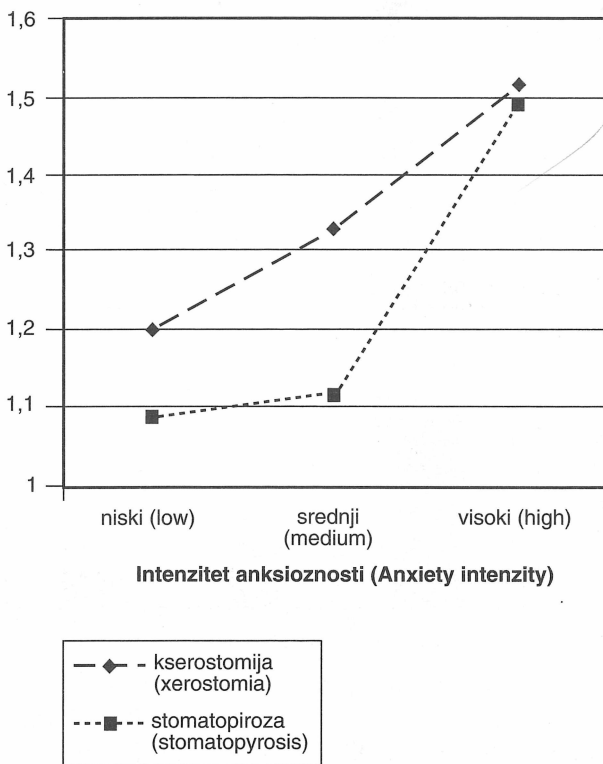
Figure 4. Achievement on the test of anxiety with regard to the sex of subjects



Slika 5. Rezultati na testu neurotizma s obzirom na spol ispitanika

Figure 5. Achievement on the test of neuroticism with regard to the sex of subjects

Anksioznost i kserostomija / stomatopiroza (Anxiety and xerostomia / stomatopyrosis)



Slika 6. Odnos simptoma kserostomije i stomatopiroze prema anksioznosti

Figure 6. Relation of symptoms xerostomia and stomatopyrosis to anxiety

Tablica 1. Raščlamba varijance anksioznosti i kserostomije / stomatopiroze

Table 1. Analysis of variance for anxiety and xerostomia / stomatopyrosis

Zbroj kvadrata Sum of squares	Stupnjevi slobode DF	Srednje vrijednosti Mean value	F-omjer F	Razina značajnosti Signif of F
3.5045 / 7.24812	2/2	1.75224 / 3.62406	3.45620 / 11.00576	0.03192 / 0.00011
138.914 / 90.2248	274 / 274	0.50699 / 0.32929		
Intenziteti anksioznosti Anxiety intensity	Srednja vrijednost Mean value	Stupanj devijacije Deviation degree		Broj ispitanika Number of patients
1 niski (low)	1.20000 / 1.08571	0.57986 / 0.44209		70 / 70
2 srednji (medium)	1.33333 / 1.11806	0.70957 / 0.46555		144 / 144
3 visoki (high)	1.52381 / 1.49206	0.83968 / 0.85898		63 / 63
Ukupan uzorak (Total)	1.34296 / 1.19495	0.71834 / 0.59427		277

Tablica 2. Raščlamba varijance neurotizma i kserostomije / stomatopiroze

Table 2. Analysis of variance for neuroticism and xerostomia / stomatopyrosis

Zbroj kvadrata Sum of squares	Stupnjevi slobode DF	Srednje vrijednosti Mean value	F-omjer F	Razina značajnosti Signif of F
6.1969 / 3.4552	2/2	3.09847 / 1.72726	6.23235 / 5.03379	0.00266 / 0.00735
136.2218 / 94.01841	274 / 274	0.49716 / 0.34313		
Intenziteti anksioznosti Anxiety intensity	Srednja vrijednost Mean value	Stupanj devijacije Deviation degree		Broj ispitanika Number of patients
1 niski (low)	1.15741 / 1.05556	0.47679 / 0.30057		108 / 108
2 srednji (medium)	1.46626 / 1.2221	0.81863 / 0.71586		163 / 163
3 visoki (high)	1.33333 / 1.33333	0.81650 / 0.59427		6 / 6
Ukupan uzorak (Total)	1.34296 / 1.19495	0.71834 / 0.59427		277

grafički prikazan. Minimalne i maksimalne vrijednosti koje ograničavaju svaki interval naznačene su ispod pojedinog stupca koji pokazuje veličinu rezultata.

Distribucija rezultata na testu samopoštovanja (Sika 3) pomaknuta je prema većim vrijednostima, što potvrđuje da je mali broj ispitanika pokazao nizak stupanj samopoštovanja.

Vrijednost aritmetičke sredine ($x = 66$) dobivenih rezultata na psihotestu za anksioznost (Slika 4) govori u prilog postojanja blago anksioznih simptoma u ispitivanom uzorku.

Rezultati dobiveni na testu neurotizma pokazuju postojanje slabo izraženih neurotskih simptoma u ispitivanom uzorku ispitanika (Slika 5).

Razlika između spolova postoji u smislu statistički češće pojave simptoma anksioznosti ($x^2 = 47,54$; $p = 0,413$; $ss = 46$) i neurotizma u žena ($x^2 = 76,9$; $p = 0,013$; $ss = 51$).

Nakon bilježenja pojave oralnih simptoma i duševnih čimbenika ispitana je njihova međusobna povezanost (Tablica 1 i 2, Slike 6 i 7). Dobiveni su rezultati prikazani grafički tako da su na apscisi naznačena tri različita intenziteta anksioznosti ili neurotizma, a na ordinati su prikazani prosječni nalazi simptoma kserostomije i stomatopiroze u ispitanika raspoređenih prema pojedinom intenzitetu.

Izgled korelativne crte na Slici 6 govori u prilog tvrdnji da bolesnici s višim postignućem na

estu anksioznosti imaju i izrazitiju pojavu kserostomije ($F=6,23235$; $p=0,00266$).

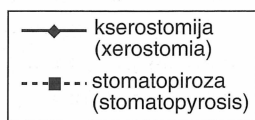
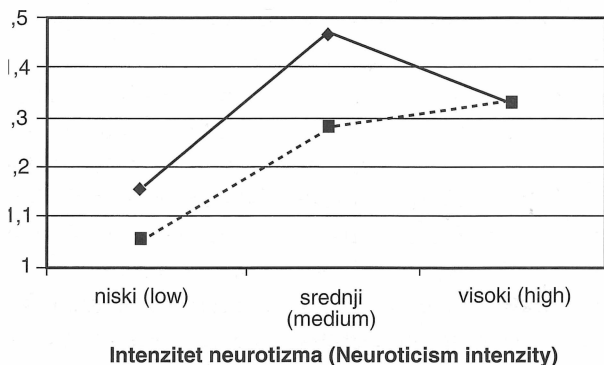
Vidljivo je također da niže vrijednosti za anksioznost odgovaraju nižim vrijednostima stomatopiroze, a više višim. Izrazita je povezanost pojava u višim intenzitetima ($F=4,19724$; $p=0,01574$).

Rezultati pokazuju da su najviše vrijednosti za kserostomiju u ispitanika koji su se svojim rezultatima na testu svrstali u srednji intenzitet neurotizma (Slika 7), one u najjačem intenzitetu vrijednosti nešto padaju, a najmanje se ta oralna promjena javlja u ispitanika s niskim stupnjem neurotizma ($F=6,23235$; $p=0,00266$). Treba istaknuti da se u visoki intenzitet neurotizma svrstalo svojim rezultatima samo šestoro ispitanika, pa zato rezultati s obzirom na primijenjene statističke metode nisu dovoljno pouzdani.

Na istoj slici je vidljivo da u pacijenata sa slabije izraženim simptomima stomatopiroze odgovara nizak intenzitet neurotizma i da porast jedne poave prati drugu, što govori u prilog pozitivnoj korelaciji ($F=5,03379$; $p=0,00735$).

Ispitivanjem nije utvrđena nikakva povezanost između promatranih oralnih promjena i samopostojanja naših ispitanika, koja se očekivala. Tako-

**Neurotizam i kserostomija / stomatopiroza
(Neuroticism and xerostomia / stomatopyrosis)**



Slika 7. Odnos simptoma kserostomije i stomatopiroze prema neurotizmu

Figure 7. Relation of symptoms xerostomia and stomatopyrosis to neuroticism

đer nije utvrđena razlika u pojavi te psihološke kategorije u ispitanika različita spola ili dobi, koja se opisuje u literaturi.

Rasprava

Smanjeno izlučivanje sline i osjećaj suhoće usta ustanovljeni su u približno jedne petine naših ispitanika, kao jak nedostatak sline (12,27%) ili rijeđe u slabije izraženom obliku (7,58%). Ovaj podatak teško je usporediv s nalazima u literaturi jer je ta pojava opisana kao popratni simptom cijelog niza zasebnih bolesti, dok su podatci o pojavi kserostomije u općoj populaciji izostali. Rezultati mogu donekle naći potporu u radu I. Javorović (13) koja spominje intenzivnu pojavu te promjene u neurotičnih bolesnika i čest nalaz blažih oblika kserostomije.

Pojava simptoma kserostomija i stomatopiroza statistički su značajno povezane. Ovaj podatak potvrđuje navode iz literature u kojima se kserostomija spominje u vezi s oralnim pirozama (10,11).

Stomatopirozu smo opazili u 10,5% naših ispitanika. Ovaj se podatak može usporediti s nalazom Dobrenića i suradnica (23) koji ističe da se bolest susreće u 18,6% svih oralnih bolesnika, što znači da gotovo svaki šesti oralni bolesnik ima takve smetnje. Rezultati našeg ispitivanja mogu se uvjetno shvatiti kao prilog takvim tvrdnjama, premda su pronađene vrijednosti manje od spomenutih. Razlog je u tome što je u ovom ispitivanju bilo mnogo odraslih zdravih osoba koje nisu oralni bolesnici, što je moralo imati utjecaja na postotak pojave te bolesti.

U vezi s pojavom simptoma kserostomija i stomatopiroza u odnosu na dob ispitanika, može se istaknuti da je pronađena znatna statistička razlika što se tiče tih bolesti u starijih ispitanika. Ovaj nalaz potpuno je u skladu s prijašnjim i istraživanjima drugih autora (2,24).

Glede ispitivanja pojave spomenutih bolesti s obzirom na spol, utvrđena je statistički znatna čestota stomatopiroza u žena.

S obzirom na dosadašnje spoznaje o nastanku piroza u starijih žena i žena u menopauzi te na rezultate u vezi sa spolom ispitanika, ovakav se je nalaz očekivao. Očekivali su se češći simptomi suhoće usta u žena, ali to našim rezultatima nije po-

tvrdeno. Ovaj podatak navodi na razmišljanje kako je moguće da u etiologiji kserostomije veću ulogu imaju duševni čimbenici, u prvome redu neurotizam i depresija, nego spol ispitanika.

Rezultati koje su ispitanici postigli u psihotestovima pokazuju prilično visok stupanj samopoštovanja, blage simptome anksioznosti i još blaže i rjeđe simptome neurotizma u ponašanju našeg ispitnog uzorka.

Pojam samopoštovanja i njegov odnos prema oralnim simptomima u ovo je ispitivanje uveden kao pretpostavka, jer iz dostupne literature nije poznato da se je dosad taj odnos istraživao, premda je samopoštovanje predmet mnogih istraživanja (18, 19) u kojima postoje opisani karakteristični nalazi toga duševnog svojstva. Budući da se testom samopoštovanja nije našla razlika između spolova, koja se često spominje u psihološkoj literaturi, te da nije pronađena povezanost pojave oralnih bolesti s mogućom psihosomatskom etiologijom, može se opravdano sumnjati u diskriminativnu vrijednost pitanja koji čine skalu samopoštovanja, i ne smijemo potpuno odbaciti mogućnost poveznosti pojava istraživanih u ovome radu.

Ispitujući odnos između oralnih simptoma i duševnih čimbenika, utvrđeno je da su oralni simptomi *stomatopyrosis* i *xerostomia* znatno statistički povezani s anksioznošću i neurotizmom.

Ovaj nalaz čini se osobito važnim premda na osnovi ovog ispitivanja ne možemo tvrditi da su promatrani duševni čimbenici uzročni za nastanak tih bolesti već samo znatno povezani s njihovom pojavom. Također nije moguće decidirano odgovoriti je li utjecaj duševnih čimbenika na pojavu spomenutih oralnih bolesti izravan ili posredan, preko nekih drugih etioloških čimbenika, kao što su npr. pušenje, crna kava i alkohol, ili su i sami duševni čimbenici odraz socijalnog statusa i načina života. Postoje indicije da bi bilo ispravnije govoriti o psihosocijalnim aspektima oralnih bolesti nego samo o duševnim čimbenicima izdvojeno, što nalazimo kao osnovnu postavku nekih radova iz literature (12,25,26).

U svakom slučaju, rezultati ovoga rada nedvojbeno pokazuju da su oralni simptomi povezani s duševnim čimbenicima i najvjerojatnija je pretpostavka da su anksioznost i neurotizam važni kata-

lizatori u mehanizmu nastanka oralnih bolesti s kojima su povezani, a možda i pokretači samoga događaja.

Zato je važno istaknuti da je potrebno na osnovi nalaza ovog ispitivanja nastaviti daljnja ispitivanja, poglavito u dva smjera. U prvom redu bilo bi potrebno proširiti istraživanja i na druge moguće etiološke čimbenike, jer ovo ispitivanje govori u prilog višezročnoj etiologiji ovih bolesti. Drugi smjer istraživanja treba usmjeriti prema preciznijem određivanju uloge pojedinih duševnih čimbenika u nastanku i trajanju pojedinog oralnog poremećaja. Pritom osobitu pozornost treba obratiti preciznosti psihometrijskih instrumenata.

Zaključak

Na osnovi rezultata dobivenih ovim ispitivanjem utvrđeno je da se simptomi suhoće usta pojavljuju u 19,77%, a simptomi pečenja kod otprilike 10,3% slučajno odabranih punoljetnih ispitanika na području Fužina i Lokava u Gorskom kotaru. Oralni simptomi suhoće i pečenja znatno su statistički povezani. S obzirom na spol, nije nađena razlika između muških i ženskih ispitanika u pojavi suhoće usta. Simptomi pečenja statistički se znatno češće javljaju u žena. Dob ispitanika važan je čimbenik u pogledu pojave stomatopiroze i kserostomije u starijih ispitanika, što potvrđuje nalaze drugih autora iz literature. Rezultati psihotestova pokazali su da u ovom ispitnom uzorku postoji u naših ispitanika visok stupanj samopoštovanja, blagi simptomi anksioznosti i još blaži i rjeđi simptomi neurotizma. Ispitivanjem odnosa oralnih bolesti i duševnih čimbenika utvrđeno je da su *xerostomia* i *stomatopyrosis* povezane s anksioznošću i neurotizmom a da to nije utvrđeno za pitanje samopoštovanja. Taj se nalaz čini se osobito važnim, iako na osnovi ovog ispitivanja ne možemo tvrditi da su duševni čimbenici uzročni za nastanak ovih bolesti već samo znatno povezani s njima. Na osnovi ovog ispitivanja ne može se potpuno procijeniti važnost ispitivanja duševnoga statusa pacijenata u smislu prevencije promatranih oralnih simptoma. Istraživanja treba nastaviti proučavajući idruge psihološke čimbenike, a pri tome treba osobitu pozornost obratiti na preciznost psihometrijskih instrumenata.

Literatura

1. WEINER H. History of psychosomatic and mind body problem in medicine. *Psychoter Psychosom Med Psychol* 1983; 36: 361-391.
2. DOBRENIĆ M. Oralna patologija. Dijagnostika i terapija. Zagreb: Jumena 1987.
3. CIPRUŠ V, HAASZ A. Neurotska osoba u stomatološkoj praksi. *Acta Stomatol Croat* 1970; 5: 115-118.
4. MOHOROVIĆ L. Strah od zubne ordinacije kao limitirajući faktor u pružanju zaštite usta i zubi. *Acta Stomatol Croat* 1986; 20(4) :91-95.
5. CORAH NL, O'SHEA RM, AYER WA. Dentist management of patient's fear and anxiety. *JADA* 1985; 110:734-736.
6. BERGGREN U. Long term effects of two different treatments for dental fear and avoidance. *J Dent Res* 1986; 61(1): 86-87.
7. BERGGREN U. Reduction of Fear and anxiety in adult fearful patients. *Int Dent J* 1987; 37: 127-136.
8. DWORKIN SF, BURGESS JA. Orofacial pain of psychogenic origin, current concepts and classification. *JADA* 1987; 115: 565-571.
9. FORMICOLA AJ, WITTE EE, CURAN PM. A study of personality traits and ANŽG. *J Periodontal* 1970; 41: 36-38.
10. Van DER PLOEG, van AN DER WAL N, EIJKAMAN. Psychological aspects of patients with burning syndrome. *Oral Path* 1987; 63 (6): 664-668.
1. DOBRENIĆ M, VIDAS I, MRVAK M. O značajnosti učešća pojedinih faktora u etiologiji stomatopiroze. *Acta Stomatol Croat* 1985; 19: 41-47.
2. BROWNING S, HISLOP S, SLULLY C. The association between burning mouth syndrome and psychosocial disorders. *Oral Surg Oral Med Oral Path* 1987; 64: 171-174.
3. JAVOROVIĆ I. Primjena funkcionalne terapije kserostomije kod depresivnih bolesnika lječenih psihofarmacima. Magistarski rad. Zagreb 1985.
14. LAUFER CH. Aspects psychosomatiques des glossodynies. *Rev odont stomatol* 1982; I: 661-665.
15. MORSE D, SCHACTERLE G, MARTIN SJ, PONRIANO JD i sur. Stress and relaxation: Evaluation by questionnaire, salivary changes and psychological responses in trained meditator. *J Oral Med* 1984; 39: 142-147.
16. MORET S, COUDERT JL, BEJAT O, LISSAC R, LISSAC. The influence of basal anxiety on unstimulated parotid and submandibular saliva. *M. Archs Oral Biol* 1993; 38: 751-754.
17. MILLER CS, DEMBO JB, FALACE DA, KAPLAN AL. Salivary cortisol response to dental treatment of varying stress. *Oral Surg Oral Med Oral Path* 1995; 79(4): 436-441.
18. COHEN AR. Implication of self-esteem for social influence. *Personality and Persuality*. New Haven. Conn Yale university Press 1959.
19. SILVERMAN J. Self-esteem and differential responsiveness to succes and failure. *J of App Soc Psychology* 1964; 69: 115-119.
20. FULGOSI A. Teorije ličnosti. Zagreb: Školska knjiga 1982.
21. MOMIROVIĆ K. struktura i mjerenje patoloških konativnih faktora. Zagreb: Republički zavod za zapošljavanje 1971.
22. MRVAK M. Hormonski aspekt glosopiroze - prikaz slučaja. *Acta Stomatol Croat* 1984; 18(3):223-226.
23. DOBRENIĆ M, CEKIĆ-ARAMBAŠIN A, VIDAS I. Rizični faktori i mogućnost njihove eliminacije kod stomatopiroze. *Acta Stomatol Croat* 1984;18 (3):217-221.
24. VIDAS I. Histopatološka osnova stomatopiroze u postmenopauzalnom periodu. *Acta Stomatol Croat* 1988;22(1):31-39.
25. BORUTTA A et al. Utjecaj socijalnih čimbenika i općeg zdravlja na oralno zdravlje. *Acta Stomatol Croat* 1997; 31:179-188.
26. AURER-KOŽELJ J, AURER A, HABAN V, IVIĆ-KARDUM M. Psihosocijalni stres i progresija parodontitisa. II Međunarodni kongres hrvatskih stomatologa. Dubrovnik 1988. Kongresno priopćenje.

The Influence of Psychological Factors on the Occurrence of Symptoms of Dryness and Burning in the Mouth

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Summary

The investigation was carried out in order to examine the presence of dryness and burning in the mouths of patients in the region of Fužina and Lokva in Gorski Kotar, and to determine the correlation of such oral changes with the occurrence of self-esteem, anxiety and neuroticism in these patients.

The examined sample comprised 277 randomly selected mature patients. All patients were subjected to a detailed oral examination and relevant oral testing. Each patient was asked to complete a specially prepared psycho-test, consisting of subtests "18 PF" - Momirović et al.

The results show that symptoms of extreme dryness in the mouth occurred in 12.27% of subjects, slight dryness in 7.58% and burning in the mouth in 10.3%. The occurrence of the symptoms of dryness and burning are mutually, statistically correlated.

The results of the psycho-tests in the examined sample indicate that a tendency towards a high degree of self-esteem, low degree of anxiety and even lower degree of neuroticism.

The investigation confirmed a positive significant statistical correlation between anxiety, neuroticism and oral symptoms. No correlation with different intensities of self-esteem was found.

Key words: *xerostomia, stomatopyrosis, self-esteem, anxiety, neuroticism*

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Introduction

Oral diseases with psychosomatic aetiology are still an insufficiently proved and investigated subgroup of psychosomatic diseases which have long been known in medicine (1). Many such diseases,

which are considered to be of psychosomatic character, still have insufficiently explained aetiology or it is considered multicausal (2).

In his daily practice the dentist frequently comes across patients showing signs of different psychic disorders. Thus it can be said the dental sur-

gery is a place where increased anxiety, fear and other forms of neuroticism can be seen (3,4,5,6,7).

Because of these factors the hypothesis of possible mutual correlation is raised between oral and mental health, and particularly whether long-term negative psychic changes exist and certain personality traits which may have an influence, through psychosomatic mechanisms, on the oral mucous membrane (8,9).

Many scientific papers have assumed significant correlation between oral symptoms of dryness and burning with psychic stress and different forms of neuroticism (10,11,12,13,14).

Apart from seeking confirmation of current results with regard to neuroticism and anxiety (15, 16, 17) the present investigation was extended to the concept of self-esteem as an occurrence, the intensity of which, according to findings in psychological literature, significantly determines the behaviour of each examined sample (18,19).

Psychological categories of anxiety and neuroticism are well known to physicians, who come across them in their daily practice.

However, the concept of self-esteem is less known and has been chosen because of its increasing importance in modern psychological investigations. It is a concept which is the basis of Rogers' theory on personality, consisting of conative factors, responsible for the modalities of human behaviour (20).

This psychological category has been introduced into this investigation in order to demonstrate eventual correlation with the examined oral changes.

The occurrence of oral symptoms of dryness and burning in the mouth, influenced by psychological characteristics, has not been paid particular interest in Gorski Kotar. Due to the fact that there had not been any previous investigation which could provide basic indicators on the occurrence of these symptoms in this region, it was first necessary to ascertain basic data on the frequency of the above changes in this region and their distribution among people of different ages and sex. In addition, it was important to determine the intensity of the occurrence of self-esteem, anxiety and neuroticism in the same examined group and the mutual correlation between oral and psychic changes.

Based on the results of that part of the investigation the aim was to determine whether, in cases of changed psychic status in our patients, such as increased anxiety and neuroticism and decreased self-esteem, there is a certain predisposition to the observed oral symptoms.

Subjects and methods

The investigation included 277 mature subjects chosen at random, who live in the area of two Gorski Kotar communes, i.e. 155 (55.9%) from the Fužina commune and 122 (44.1%) from the Loka commune.

There were 150 women (54%) and 127 men (45%), age range 18 to 77 years. Average age for all subjects was 38.6 years (women 37.5 years, men 41.2 years). According to age subjects were divided into a young group (from 18 to 49 years) and an older group (from 50 to 77 years). Patients taking psychotropic drugs and suffering from mental diseases were excluded from the investigated sample.

According to the prepared questionnaire basic data were collected for each subject and a detailed oral examination carried out.

For determination of reduced salivation the Vitro AD-test was applied and when positive a salivation test was used (Sal-test) according to Dobrenić (2) which is performed by collecting saliva by means of an injection for one minute. According to the following table patients were divided into categories:

1. from 0.4 to 0.5 ml/min = normal salivation
2. from 0.2 to 0.4 ml/min = oligosialia
3. less than 0.2 ml/min = xerostomia

The intensity of pyrosis was also expressed in three degrees.

1. Burning of weak intensity which does not occur spontaneously but only after irritation/stimulation.
2. Burning occurs spontaneously, is of intermittent character and increases on irritation/stimulation.
3. Permanent and after irritation/stimulation increases.

After recording the oral finding the psychological part of the investigation was started in which specially selected sub-tests "18 PF" were used, Momirović et al (21) which the subjects completed. Their psychometric character enabled examination of the tendency of the examined sample towards self-esteem, anxiety and neuroticism. According to the results achieved on sub-tests subjects were divided into three intensities (weak, moderate and severe) which we obtained by a uniform/even division of the range from minimal to maximal values of all achieved on one sub-test.

The data obtained by recording oral symptoms and psychic factors were prepared for statistical analysis. The expected difference with respect to the sex of subjects was tested by means of the sum of squares test. For examination of the relation between oral changes and psychological characteristics we used the method analysis of variance (ANOVA). By this method correlation was determined between the distribution of results on the psychotests, divided into three intensities, and distribution of the occurrence of oral symptoms in the whole sample.

Results

The occurrence of symptoms of xerostomia was recorded in 19.77% of subjects, while symptoms of stomatopyrosis was found in 10.3% of subjects. The results show that these two phenomena are positively statistically significantly correlated (coeff. correlation = 0.36903).

The results of the occurrence of symptoms of xerostomia were recorded as percentages of the total number of subjects (Fig. 1).

According to these results it can be seen that a large number of subjects had normal salivation (79.42%), while a small number had reduced intensity of saliva flow (7.5%) or a marked lack of saliva (12.27%).

With regard to the relation between sexes, tested by means of χ^2 test, no statistically significant difference was found in the occurrence of these changes between male and female subjects ($\chi^2 = 2.423$, $p = 0.493$, $ss = 3$).

The frequency of the occurrence of stomatopyrosis was recorded in the three previously defi-

ned intensities, which are shown on the x-axis in the graphic presentation on Fig. 2. The percentages of the total number of subjects are marked on the ordinates.

These oral disorders were not determined in the majority of subjects (88.8%). In the majority of patients who did experienced a feeling of burning in the mouth symptoms were of moderate intensity (5.5%) while a smaller number had pyrosis of weaker intensity (4.3%) and marked severe disorders (1.5%).

With regard to the occurrence of these disorders in different sexes, a significantly statistical difference was found, checked by χ^2 test, indicating severer occurrence of pyrosis in females ($\chi^2=10.91$, $p=0.015$, $ss=3$).

The results of the psychotests are shown in Figs. 3, 4 and 5. For easier presentation and following the distribution of results, the interval between minimal and maximal values achieved in a test was divided into five equal intervals and graphically presented. Minimal and maximal values, limiting each interval, are marked under the relevant column which shows the result.

Distribution of the results of the test for self-esteem (Fig. 3) has been shifted towards higher values, which indicates that only a small number of subjects showed a low level of self-esteem.

The value of arithmetic means ($\bar{x}=66$) obtained from the results of the psychotest for anxiety (Fig. 4) indicates the existence symptoms of mild anxiety in the examined sample.

The results obtained on the test for neuroticism show the existence of poorly expressed neurotic symptoms in the examined sample of subjects (Fig. 5).

Difference between the sexes exists with regard to the statistically more frequent occurrence of symptoms of anxiety ($\chi^2=47.54$, $p=0.413$, $ss=46$) and neuroticism in females ($\chi^2=76.9$, $p=0.013$, $ss=51$).

After recording the occurrence of oral symptoms and psychological factors, their mutual correlation was examined (Tables 1 and 3, Figs. 6 and 7). The results obtained are shown graphically, so that on the x-axis three different intensities of anxiety or neuroticism are shown, and on the ordinates average findings are shown of symptoms of xerostomia and stomatopyrosis in subjects grouped according to each intensity.

The appearance of the correlative line on Fig. 5 indicates that patients with a higher achievement on the test for anxiety also have a marked occurrence of xerostomia ($F=6.23235$, $p=0.00266$).

It can also be seen that lower values for anxiety relate to lower values of stomatopyrosis, and higher values for anxiety to lower values of stomatopyrosis. There is a marked correlation of the occurrence in higher intensities ($F=4.19724$, $p=0.01574$).

The results indicate that the higher values for xerostomia are associated with subjects who, according to their achievements on the test were classified as moderately intense neuroticism (Fig. 7), while in the severe intensity values fall somewhat, and the lowest intensity of these oral changes occurred in subjects with a low degree of neuroticism ($F=6.23235$, $p=0.00266$). It should be emphasised here that, according to their results, only six subjects were included in high intensity of neuroticism, and for this reason the results with regard to the applied statistical methods are not sufficiently reliable.

On the same Fig. it can be seen that in patients with poorly expressed symptoms of stomatopyrosis correspond to low intensity of neuroticism, and that an increase in one occurrence is followed by another, which indicates a positive correlation ($F=5.03379$, $p=0.00735$).

During the investigation no correlation was determined between the observed oral changes and self-esteem in our subjects, which was expected. Neither was any difference determined in the occurrence of these psychological categories in subjects of different sex and age, which has been described in literature.

Discussion

The occurrence of reduced salivation and a feeling of dryness in the mouth was determined in almost one fifth of our subjects. A severe lack of saliva was determined in 12.27% of subjects and a less marked form in 7.58%. This finding is difficult to compare with findings in literature as this occurrence is described as an accompanying symptom to a whole range of certain diseases, while data on the occurrence of xerostomia in the gene-

ral population is lacking. To a certain extent the results are supported by a paper by I. Javorović (13) who mentions the intense occurrence of such changes in neurotic patients and a frequent finding of a mild form of xerostomia.

The occurrence of symptoms of xerostomia and stomatopyrosis are statistically significantly correlated. This finding agrees with reports in literature, in which xerostomia is mentioned in connection with oral pyroses (10,11).

The occurrence of stomatopyrosis was found in 10.5% of our subjects. This finding can be compared with the finding of Dobrenić et al (23), who reported finding the disease in 18.6% of all oral patients, which means that almost every sixth oral patient had such disorders. The results of our investigation can be conditionally understood as a contribution to such claims/reports, although the values found were less than those mentioned above. The reason being that in this investigation many healthy adults were included in the investigation who were not oral patients, which clearly must have had an influence on the percentage of the occurrence of these diseases.

With regard to the occurrence of symptoms of xerostomia and stomatopyrosis in relation to the age of subjects, a significant statistical difference was found with regard to the occurrence of these diseases in older subjects. This finding completely agrees with investigations carried out by other authors (2,24).

In connection with the occurrence of these diseases with regard to sex, a statistically more significant occurrence of stomatopyrosis was found in females.

Because of current knowledge on the occurrence of pyrosis in older females and the menopause and results connected with the sex of subjects, such a finding was expected. More frequent symptoms of dryness in the mouth was expected in females, although according to this investigation this was not confirmed. This finding leads to the conclusion that a more significant role may be played by psychological factors in the aetiology of xerostomia, primarily neuroticism and depression, rather than the sex of subjects.

The results which subjects achieved by completing the psycho-tests indicate quite a high level

of self-esteem, mild symptoms of anxiety and even milder and rarer symptoms of neuroticism in the behaviour of the investigated sample.

The concept of self-esteem and its relation to oral symptoms was introduced as a hypothesis in this investigation, because it is impossible to learn from available literature whether or not this relation has been investigated, although self-esteem has been the subject of many investigations (18,19) in which we find the described characteristic findings of these psychological characteristics. As no difference between the sexes was found in the self-esteem test, which has frequently been reported in psychological literature, and as no correlation was found between the occurrence of oral diseases and possible psychosomatic aetiology, there is justifiable doubt in the discriminative value of the questions which comprise the scale of self-esteem, and thus the possibility of correlation between the occurrences examined in this investigation should not be completely ignored.

While examining the relation between oral symptoms and psychic factors, it was determined that oral symptoms stomatopyrosis and xerostomia are significantly statistically correlated with anxiety and neuroticism.

This finding is particularly significant, although on the basis of this investigation it cannot be stated that the observed psychic factors are the cause for the occurrence of these diseases, but merely significantly correlated/connected with their occurrence. It is also impossible to answer with any certainty whether the influence of psychological factors on the occurrence of the above oral diseases is direct or indirect, through some other etiologic factors, such as for example harmful habits, i.e. smoking, consumption of black coffee and alcohol, or whether the psychological factors themselves are a reflection of social status and life style. There is evidence to suggest that it would be more correct to speak of the psychosocial aspects of oral diseases rather than only the psychic factors, which are the basic assumptions of some papers in literature (12,25,26).

In any case, the results of this investigation show that the occurrence of oral symptoms are connected with psychological factors and the most likely assumption is that anxiety and neuroticism are significant catalyzers in the mechanism of the oc-

currence of oral diseases with which they are connected, and possibly even the generators of the occurrence itself.

Therefore it is important to emphasise the need to continue this investigation, mainly in two directions. Firstly, the investigation should be extended to include other possible etiologic factors, as the present investigation indicates multicausal aetiology of these diseases. Secondly, the investigation should be aimed at more precisely determining the roles of some psychological factors in the occurrence and duration of certain oral disorders. At the same time special attention should be paid to the accuracy of psychometric instruments.

Conclusion

Based on the results of this investigation it was determined that symptoms of dryness in the mouth occurred in 19.77% of subjects and symptoms of burning in approximately 10.3% of subjects in a randomly selected sample of adults in the region of Fužina and Lokva in Gorski Kotar.

The occurrence of oral symptoms of dryness and burning are significantly statistically correlated.

With regard to sex, no difference was found between male and female subjects with respect to dryness in the mouth. However, symptoms of burning were statistically significantly more frequent occurrences in females. The age of subjects was a significant factor for the occurrence of stomatopyrosis and xerostomia in older subjects, which agrees with the findings of other authors in literature.

The results of the psycho-tests show that subjects in the examined sample had a high degree of self-esteem, mild symptoms of anxiety and still milder and rarer symptoms of neuroticism.

By examining the relations between oral diseases and psychic factors it was determined that xerostomia and stomatopyrosis are correlated with anxiety and neurosis, while this was not determined in the case of self-esteem.

Although this finding is particularly significant, on the basis of the present investigation it cannot be claimed that psychic factors are the cause of the occurrence of these diseases, but they are significantly connected with their occurrence.

On the basis of this investigation the importance of examining the psychic status of patients cannot be entirely evaluated, with regard to prevention of the observed oral symptoms. The investiga-

tion should be continued and include the study of other psychological factors, during which special attention should be paid to the accuracy of psychometric instruments.