

Condition of Fixed Prosthodontic Appliances and Oral Hygiene in a Group of Elderly Psychiatric Patients

Stanje fiksnoprotetskih nadomjestaka i oralna higijena u skupini psihijatrijskih pacijenata starije dobi

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Summary

The aim of this study was to describe fixed prosthodontics status and oral hygiene in a group of edentate elderly psychiatric patients. Heteroanamneses were taken from medical records. Medical examinations of dental condition were carried out by dental mirror and probe. Assessment of periodontal condition was made according to CPITN index and Plaque index was taken according to the method of Silness and Loe. The results showed that 26% of patients had plaque index score 2 and 23% plaque index score 3. The CPITN index values showed scores 2 and 3 in 43% of patients. Chi square test for these two parameters showed statistical significance. The Glanz quality index values showed an acceptability in 72% of the existing crowns and bridges.

Key words: crowns and bridges, oral hygiene, psychiatry, gerodontology

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Introduction

The demographic profile of the world's nations is changing with an increasing number of elderly, which, due to the development of science, technology and medicine differs from country to country (1-6).

In industrialized countries most of the workforce is employed in industry, commerce and the services and their level of income, education and health is much higher compared to nonindustrialized countries. Although, according to population, only

one quarter of the world's population live in industrialized countries, 45% of the elderly of over 60 years and 60% of those of more than 80 years live in these countries (7).

Differences in the demographic profile are apparent between industrial and nonindustrial countries and so also is life expectancy. In 1994 Dibbiaggio et al. (8) reported that more than 100000 United States citizens are older than 100 years. McEntee (9) in Canada pointed out the high increase in the number of elderly inhabitants aged from 75 to 84 years and the growth trends in the majority of countries.

In Croatia 12% of the population is 65 years and older. The profile of the elderly is also changing owing to development of preventive medicine and medicine as a whole and it is characterized by three main factors: general health, environment and life style.

Mental illness has a negative effect on the profile of the elderly and oral health. Mojon et al. (10) found 25% of the elderly residents in an old persons' home without complete dentures, and a high prevalence of inadequate prostheses. McEntee et al. (11) found 1/2 (50%) of institutionalized elderly had rot or coronal caries, thus confirming the poor oral hygiene with caries report founded data. In a Danish population Vigild (12) found 2/3 of the patients were edentulous. Hede (13) found decayed teeth in 55% of hospitalized psychiatric patients.

The aim of this investigation was to evaluate oral hygiene maintenance and the condition of fixed prosthodontic appliances in a group of elderly psychiatric edentate patients.

Material and methods

The investigation was performed on a group of 149 elderly psychiatric residents of the two largest psychiatric hospitals in Zagreb. From the total number of 149 patients 61 were found to be edentate and the results of findings in the edentate subjects are presented here. Medical examinations of the dental and oral status were performed by means of a dental mirror, conventional and graduated probe. Dental status and the need for prosthetic therapy was recorded in specially designed questionnaires.

Oral hygiene was recorded according to Silness and Loe Plaque Index (14), CPITN Index was tested according to the recommendations of the World Health Organization (15). For evaluation of the condition of fixed prosthodontic appliances, Glanz et al. Index for Quality of Prosthodontic Appliances was used (16). The obtained data were processed by statistical package for social sciences SP. On all tested variables basic univariate statistical analysis was performed. For some categories of variables percentages were recorded as typical relative indicators. Cross validation of the correlation between some variables was examined by contingency tables and bivariate procedures, such as chi square test.

Results

The results of the medical examinations and interviews are given in tables, as follows. Table 1 shows distribution of patients by age and sex. The largest age group was the group from 75 to 84 years in both sexes with 78 patients. Table 2 is the contingency tables of the results of CPITN Index Grades and Plaque Index Grades by Silness & Loe. Chi square test was found statistically significant for these two values. The CPITN Index Grades increased parallelly with the increase in the plaque index values. Grades 2 and 3 of both tested Indexes were estimated in 48% of the examined patients. Table 3 shows the distribution of crowns and Table 4 distribution of bridges. Sixty-one patients had 50 crowns; 47 patients were without crowns, while the rest had one to 8 crowns. Bridges were five times less frequent in comparison with crowns. Four of the patients had one bridge and one patient was recorded with three bridges.

Table 1. *Distribution of the Sample by Age and Sex*

Tablica 1. *Raspodjela uzorka prema dobi i spolu*

Age in years	MALE		FEMALE		TOTAL	
	N	%	N	%	N	%
65-74	8	38	13	62	21	100
75-84	11	33	22	67	33	100
≥85	2	29	5	71	7	100
TOTAL	21	34	40	66	61	100

Table 2. *Contingency Table of CPITN Index and Plaque Index by Silness and Loe*

Tablica 2. *Kontingencijska tablica CPITN indeksa i plak indeksa prema Silnessu i Loeu*

		Loe & Silness Plaque Index Grades				
		0	1	2	3	TOTAL (N)
CPITN INDEX GRADES	0	20	-	-	-	20
	1	2	6	1	-	9
	2	-	3	9	1	13
	3	-	-	6	7	13
	4	-	-	-	6	6
TOTAL (N)		22	9	16	14	61

Table 3. *Distribution of the Number of Crowns per Patient*
 Tablica 3. *Raspodjela broja krunica po bolesniku*

										Total
Patients	48	3	1	2	3	1	1	1	1	61
Crowns	0	1	2	3	4	5	6	7	8	49

Table 4. *Distribution of the Number of Bridges per Patient*
 Tablica 4. *Raspodjela broja mostova po bolesniku*

					Total
Patients	54	4	2	1	61
Bridges	0	1	2	3	11

The results of Glanz et al. Index for Quality of Prosthodontic Appliances are shown in Table 5. Only 28% of the crowns were satisfactory, in the range of excellent R (8%) and in the range of acceptability S (20%). Seventy-two percent of the crowns were unacceptable, in the range replace for prevention T (56%) and in the range for immediate replacement V (16). A similar result was recorded for bridges.

Table 5. *Distribution of Obtained Values for the Quality of Fixed Prosthodontic Appliances According to Glanz et al. Index*

Tablica 5. *Raspodjela dobivenih vrijednosti kvalitete fiksno-prostetskih nadomjestaka prema indeksu Glanza i sur.*

	Satisfactory				Not Acceptable				Total	
	R		S		T		V			
	N	%	N	%	N	%	N	%	N	%
Crowns	4	8	10	20	28	56	8	16	50	100
Bridges	-	-	3	27	5	46	3	27	11	100
Total	4	7	13	21	33	54	11	18	61	100

Discussion and conclusion

The condition of periodontal tissue of abutments and oral hygiene plays an important role in the survival period of crowns and bridges in the mouth. According to Ettinger and Back (17) in physically

disabled and mentally impaired persons access to dental care and self care is not always successful and neglected oral hygiene results in deterioration of dental health. In the elderly psychiatric patients in this sample 50% had higher grades of Plaque Index, indicating generally poor oral hygiene. The condition of periodontal tissues according to the CPITN Index showed moderately or severely affected periodontal tissue. In this investigation the moderate and severe calculus found agrees with the findings of Belting and Gupta (18) who found poor oral hygiene in psychiatric patients. In a Dutch survey of psychiatric patients Ter Horst (19) also found a high prevalence of poor oral hygiene, associated with insufficient brushing of the teeth.

Angellilo et al. (2) found 42% of the patients in an Italian psychiatric population with a large amount of plaque and calculus, and 2/3 of the examined sample needed comprehensive periodontal treatment. Vigild et al. (12) also found poor oral hygiene in such patients.

The quality index grades in this sample were satisfactory in 28% of the tested crowns and bridges. Unacceptable appliances were found in 72% of cases. Thus many of the fixed prosthodontic appliances were due for replacement. Fortunately only 16% of the crowns and 27% of the bridges needed immediate replacement. The most common reasons for replacement were abutment fractures associated with dental caries and gingival inflammation with loose of crown's retention. Similar reasons with a higher degree of acceptability for restoration were estimated by Glanz et al. (21). On a wider age range in a population in Malme (mean 53.6 years), he found that 20% of the fixed prosthodontic appliances were unacceptable, which is rather low compared to the results of this investigation.

In geriatric institutions advice on oral care is often provided by physicians as a part of total medical care. However, patients often rely on nurses, who are usually overworked and frequently uninformed about correct oral hygiene care.

It is concluded that dental education should be an integral part of ADL training in psychiatric care. Development and evaluation of specific preventive programs for the elderly mentally impaired ill is a challenge to dentists and psychiatrists to establish better cooperation in the complete care of these patients.

**STANJE FIKSNOPROTETSKIH NADOMJESTAKA I ORALNA
HIGIJENA U SKUPINI PSIHIJATRIJSKIH PACIJENATA
STARIJE DOBI**

Sažetak

Svrha rada bila je istražiti fiksnoprotetski status i oralnu higijenu u skupini psihijatrijskih pacijenata starije životne dobi. Heteroanamneze pacijenata uzete su iz njihove medicinske dokumentacije. Pregled usne šupljine obavljen je zubarskim ogledalom i sondom. Prosudba stanja parodonta učinjena je pomoću CPITN indeksa. Plak indeks izmjenjen je po metodi Silnessa i Loea. Rezultatima istraživanja utvrđeno je da 26% pacijenata ima 2. stupanj i 23% 3. stupanj plak indeksa. Dobivene vrijednosti CPITN indeksa u 43% slučajeva bile su 2. i 3. stupnja. Hi kvadrat test za parametre plaka i stanja parodonta potvrdio je statističku značajnost. Dobivene vrijednosti Glanzovog indeksa kvalitete postojećih starih krunica i mostova pokazale su neprihvatljivost u 72% ispitanika.

Gljučne riječi: krunice i mostovi, oralna higijena, psihijatrija, gerodontologija

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