

Edentulism and Dental Status in Older Populations of Eight European Countries

Bezubost i dentalni status u starijoj populaciji osam europskih zemalja

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Summary

In the framework of a multinational study the oral health status and treatment need of 19.845 subjects in age groups 55-64, 65-74 and >74 years from Austria, Byelorussia, Germany, Hungary, Italy, Poland, Slovenia, and the Czech Republic were determined. The oral health status of the adult populations of all countries was characterized by a high rate of tooth loss and edentulism. Age-related continuous deterioration of the oral situation is evident. The prevalence of caries for all age groups and countries was high and was characterized by a high M-component. 90% of all dentate subjects had periodontal disease. In order to improve the oral health status in older populations, age-related concepts of prevention for the reduction of caries and periodontal disease, as well as tooth-preserving treatment strategies for lifelong preservation of natural teeth, are indispensable.

Key words: *elderely, edentulism, dental caries, periodontal disease*

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Introduction

From a global point of view the current demographic development is characterized by the aging of populations. This process is especially evident on the European continent. In 19 of 28 countries the proportion of people over 60 years of age will rise to more than 22% by the year 2000; by the year 2025 every seventh European may be older than 60 years (1). Consequently the age groups of the population with high need of social and medical care grow. Since the early eighties reports on the distri-

bution of oral diseases and dental care of those past middle age and old people are very well represented in international publications. Abundant data are available, especially for the United States and West European countries (2-9). Data on the oral health status of age groups older than 60 years for Central and East European countries are either lacking or scarce and are additionally very heterogeneous (10). The groups of subjects on the one hand do not represent the resident population and on the other the applied criteria and methods of research, including oral parameters under consideration, can be compa-

red only partially or not at all. Against this background the concept of an epidemiological study on the oral health status and dental treatment need of the elderly population of Central and Eastern Europe was developed by the WHO Collaborating Centre in 1988. Contributors to the "Multinational Study of gerostomatological treatment need", carried out from 1990 to 1994, were under the direction of national co-ordinators (NC) research groups from Austria (A,NC: Fischer); Byelorussia (BY; NC: Orda), Czech Republic (CZ; NC: Dapeci), Germany (new counties G; NC: Künzel), Hungary (H; NC: Vago) Italy (I; NC: Silla), Poland (PL; NC: Wloch) and Slovenia (SLO; NS: Rode, Vrbič). The main goal of the multinational study was to obtain representative data on the oral health status of the elderly on an international scale, using common methodological standards. Another goal was to put forward recommendations for the improvement of gerostomatological care generally, as well as with respect to national particularities. From the comprehensive data material selected tooth-related results are presented in this paper.

Design and Methodology of the Study

In the multinational study 19.845 subjects in age groups 55-64, 65-74, and >74 from Austria, Byelorussia, the Czech republic, Germany, Hungary, Italy, Poland and Slovenia were examined (Table 1). The WHO Oral Health Assessment Form 1986 was modified according to the requirements of gerostomatological surveys and tested in two pilot studies (11,12). Included in the general information of the record form were in addition to age, sex, and residence (number of inhabitants >200.000 = large city, number of inhabitants >25.000 = city, number of inhabitants <25.000 = rural area) occupation, living situation, general health status and oral health behaviour. The oral health status was describe by the periodontal and tooth status (DMFT, root caries, crowns and bridge replacements), the occurrence of lesions of oral mucosa and jaw joint findings and prevalence of removable dentures (kind, denture wearing time, denture hygiene). The treatment need of dental caries, pulpal and periodontal diseases as well as the need for prosthetic rehabilitation, including the need for immediate care was determined.

Based upon the prevalence of oral diseases identified by the pilot studies (11,12), as well as the treatment need depending on age and various social factors, a national sample size of about 1500 subjects was envisaged for each age group in order to obtain representative results on morbidity and treatment need in the respective population. The stratified cluster technique was chosen as the method of sampling, whereby large and small cities as well as rural regions were specified as clusters. The samples were chosen at random taking into account demographic conditions specific for the country. Central registers of residents, electoral registers and regional systems of recording residential status were used. To ensure a high response rate, second and third invitations were required. For the oldest age group house visits were planned and completed due to the subjects' multimorbidity and their limited ability to move. It was not allowed to invite "replacement-subjects" in order to avoid positive deviations. Taking into consideration the social changes, including public health, in all participating countries, in order to ensure participation, certain limitations had to be accepted concerning the planning of the gerostomatological study. In Austria it was not possible for reasons of data protection to draw a representative sample of the population. Thanks to the initiative of the Ludwig-Boltzmann Institute for Gerostomatology examinations could be performed in Lower Austria by two calibrated dentists with 322 subjects (Table 1). 20% of the invited subjects responded to the invitation. For legal reasons house calls were not permissible either, so that and improvement of the participation rate was not possible. The results of the Austrian sample are carried on within the framework of the comparative international study for reasons of comprehensiveness as findings of orientation and they are given only peripheral consideration as they are by no means representative. In *Byelorussia* three out of six districts were chosen for the study. Three dentists collected the data of 1392 subjects. (Table 1). At the time of the study examinations were possible only in nursing homes so that two-thirds of all subjects came from these institutions; all >74 year-olds were residents of nursing homes. For international comparison the data for this age group was taken into consideration only for selected parameters. The data from the *Czech Republic* chosen for comparative evaluation in this study, were collected by five calibrated dentists according to the same criteria as for the multi-

Table 1. Distribution of the national study populations according to age and gender
 Tablica 1. Raspodjela populacije nacionalnih studija prema dobi i spolu

Number of subjects	Country							
	A	BY	CZ	G	H	I	PL	SLO
TOTAL	322	1392	3377	8492	808	1017	3706	731
Male	156	503	1560	3170	341	434	1465	294
Female	166	889	1817	5322	467	583	2241	437
Urban	176	770	-	5074	808	957	2566	731
Rural	146	622	-	3418	-	60	1140	-
55-64 Age group	134	485	2600	2751	352	395	1145	520
65-74 Age group	121	426	575	2797	213	327	1173	116
>74 Age group	67	481	202	2944	243	295	1388	95

national gerostomatological comparative study as part of a national oral health survey of 3377 subjects in 1987 (Table 1). The data give an impression of the prospective situation of the Czech elderly. In *Germany* data collection concentrated on the new counties. Representative samples of the population were taken in two cities with >500.000 inhabitants, in two cities with >200.000 inhabitants, and in 11 rural communities with >25.000 inhabitants. The samples were taken from the files of residential records. 12 calibrated dentists examined a total of 8492 subjects (Table 1). For financial reasons a survey could not be performed in *Hungary*. In connection with a cardiovascular survey (0.6% sample of the population) in the northern Hungarian city, Győr (200.000 inhabitants) the status of 808 subjects (Table 1) was completed by a calibrated dentist. The available data are not representative for Hungary and can serve as a municipal sample only for epidemiological orientation regarding the oral health status and treatment need of the Hungarian old age population. It was also not possible for financial reasons to obtain a national sample for *Italy*. Existing interest in the study led to the selection and inclusion of the province Trieste with the city of Trieste (231.047 inhabitants and the territory Trieste 30.792 inhabitants). The sample was drawn on the basis of the existing health register. 1017 subjects (Table 1) were examined by three calibrated dentists. The province of Trieste is considered typical for Italy from a demographic point of view. Seven study regions were chosen for the national sample of *Poland*, whereby three cities with the surrounding rural communities had a total of more than 200.000 inhabitants and four cities including the surrounding region had

more than 500.000 inhabitants. 3706 subjects (Table 1) were examined by eight calibrated dentists. The samples were drawn from the residents records. The *Republic of Slovenia* participated in the study originally planned for Yugoslavia. The capital, Ljubljana, with 300.000 inhabitants, a small city with 32.000 inhabitants and a rural community with >25.000 inhabitants, were chosen for the study. The randomized selection of subjects was performed on the basis of electoral registers. The findings for 731 subjects (Table 1) were obtained by five calibrated dentists. The >74 year old age group came mostly from nursing homes and is, therefore, taken into consideration only for selected parameters.

Epidemiological Methods

The data collection was based upon the standardized WHO record form and the accompanying manual of the multinational study of gerostomatological treatment need. In all samples oral inspection was performed with sufficient lighting at the dental unit or in the flat of the subjects. Caries diagnosis was performed with dental probe and plane mirrors. The examinations were done without air-syringe, wads of cotton wool, or cold light, following the recommendations of WHO (13). A graduated periodontal probe (Morita company, Japan) was used in order to determine the CPITN. The clinical findings were entered directly into the WHO record form. The computer software allowed to enter the data in accordance with the record form. Specifically developed EDP programs and standard software packa-

ges were used for the input, checking, and statistical analysis (14).

Calibration

The calibration of national coordinators and their co-partners was accomplished in several steps on the basis of the methodological manual developed for the study. An epidemiological pre-training was offered using slides of clinical situations as they may develop in elderly people due to tissue aging processes and exterior effects (abrasions, pigmentations, etc.). In order to achieve at least an 85% interexaminer consistency of diagnostical judgements, clinical calibrating with selected patients followed as the second step. The national coordinators of their co-partners were responsible for the training and calibration of the examiners. In this manner an acceptable degree of diagnostic consistency was accomplished among the countries participating in the multinational comparative study.

Statistical Analysis

The statistical data were analyzed using the statistics software package SPSS version 4.1 (Institute

for Medical Computer Science and Biometry, Charité Hospital of the Humboldt University, Berlin). The data were differentiated according to age group, sex, socio-medical and oral variables. Statistical methods were applied to test significance for chosen characteristics (two and higher dimensional contingency tables in order to compare frequencies, analysis of variance for comparing means, parametric and nonparametric tests). An the level of significance an error probability of $\alpha = 5\%$ was adopted.

Results

The oral health status of those past middle age and old subjects is characterized mainly by edentulism. The distribution of edentulism by countries, age group and sex illustrated in Table 2; insignificant differences between national populations, as well as significant differences between sexes are indicated below or next to the numerical values. In Germany, Poland, the Czech Republic and Hungary edentulism for the 55-64 year olds varied from 17 to 20%. 10% of the subjects were edentulous in Byelorussia and Austria, 6.7% in Slovenia, and 5.8% in Italy. The slightly higher edentulism of women was significant only for the Czech and the Hungarian samples.

Table 2. Prevalence of the edentulism in the national study populations
Tablica 2. Prevalencija bezubosti u populaciji nacionalnih studija

	Country															
	A		BY		CZ		G		H		I		PL		SLO	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Age group 55-64																
Total	14	10.5	50	10.3	518	19.9	566	20.6	58	16.8	23	5.8	212	18.5	35	6.7
Male	5	8.1	26	10.4	214	18.0	241	19.6	22	12.6	11	6.1	98	18.9	18	7.2
Female	9	12.5	24	10.3	304	21.6	325	21.3	36	21.2	12	5.6	114	18.2	17	6.3
Age group 65-74																
Total	20	14.9	119	27.9	180	31.3	1039	37.2	112	53.3	42	12.8	416	35.5	34	29.3
Male	8	14.0	38	23.9	70	24.9	384	37.5	44	50.0	14	9.9	143	30.0	6	23.1
Female	12	18.8	81	30.3	110	37.4	655	36.9	68	55.7	28	15.1	273	39.2	81	30.3
Age group > 74																
Total	26	38.8	-	-	118	58.4	1774	60.3	174	71.9	81	27.5	752	54.2	-	-
Male	14	38.9	-	-	45	51.1	541	58.9	43	58.1	27	24.1	222	47.3	-	-
Female	11	36.7	-	-	73	64.0	1233	60.9	131	78.0	54	29.5	530	57.7	-	-

* Statistical comparison between countries only shown for non-significant (ns); gender significant was noted as s. Significant level was taken for 5%.

In the age group of 65 to 74 year-olds edentulism increased even further; more than one third of all subjects in the Czech Republic, Germany and Poland had no teeth; in the Hungarian sample the proportion exceeded 50%. Without significant differences the lowest edentulism was recorded for the Italian and Austrian samples. Significant sex differences at the disadvantage of women for this age group were found only in the Czech and Polish sample. With the exception of the Italian and the Austrian populations edentulism for the oldest group was higher than 50%; in Hungary even 72% of the subjects were without teeth. In Hungary and Poland edentulism of women was 20% and 10% respectively significant above the level for men. The jaw related evaluation of edentulism showed a more frequent occurrence in the upper jaw (Figure 1). The differences were significant, however, only in the Hungarian and Byelorussian samples, as well as for the >74 old Austrian subjects. The number of remaining sound teeth in occlusion decreased with incre-

asing age as expected (Table 3). In decreasing rank order the dentate 55-64 year olds had 18 teeth in Austria, Byelorussia and Italy, 16 teeth in Slovenia, 15 in Germany, and 12 in Poland as well as Hungary. The number of teeth varied significantly in these countries. With the exception of the Hungarian, Italian, and Polish samples about one half of the remaining teeth were healthy. On average between 7 and 10 teeth still in occlusion; even 16 teeth were found to be still in occlusion for Italian subjects. In the age group 65-74 and >74 years the small number of subjects in the Austrian and Hungarian samples reduce the representativeness of the results. The 65-74 year old German and Polish subjects still had 10 teeth of which about on half were healthy. The Slovenian and Hungarian subjects had 1 to 2 teeth less; only one quarter of these were sound. The largest number of remaining sound teeth in occlusion were recorded with 15.6 and 12 teeth for the Italian subjects. They had twice as many teeth in occlusion than the German subjects; only 5 teeth were still

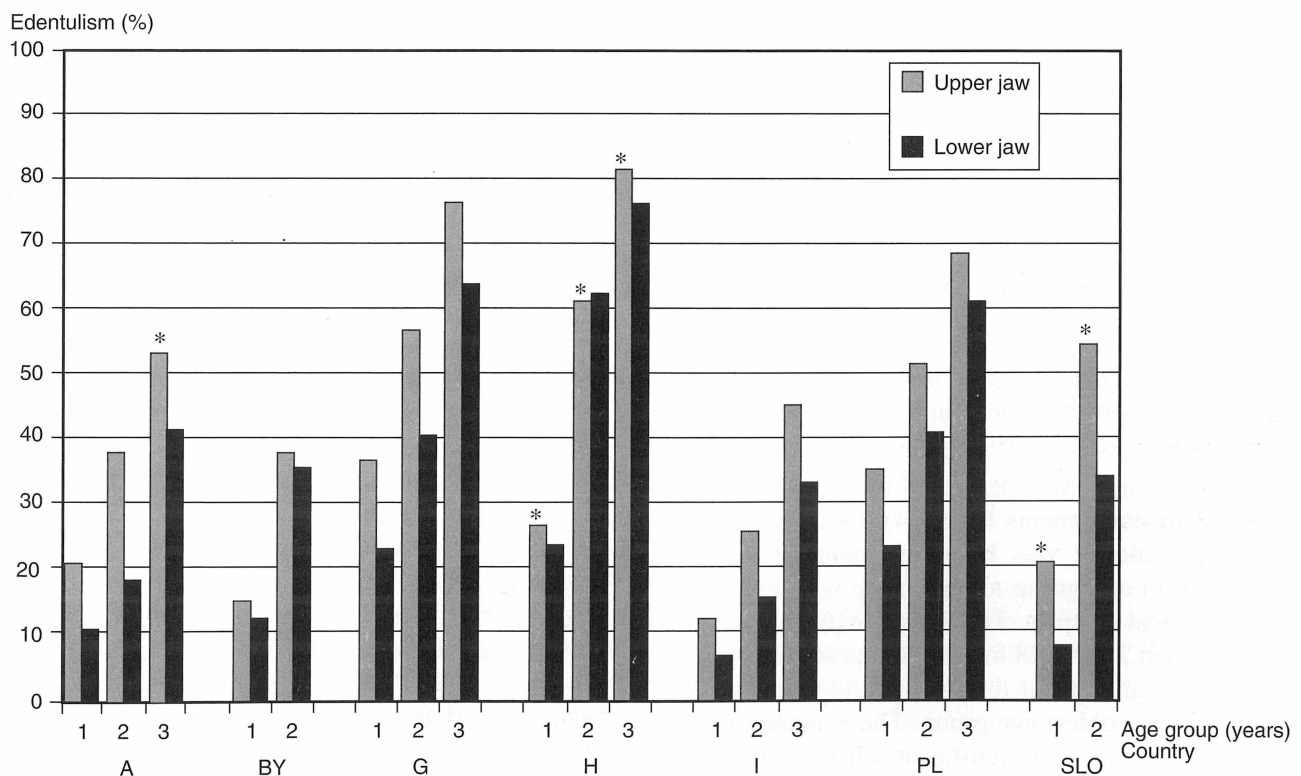


Figure 1. Edentulism of the upper and lower jaw in the national study populations:
 * the difference of the edentulism rate of upper and lower jaw is not significant
 Slika 1. Bezubost u gornjoj i donjoj čeljusti u populaciji nacionalnih studija
 * razlika u bezubosti između gornje i donje čeljusti nije značajna

Table 3. Number of teeth, sound teeth and number of teeth in occlusion in the dentate national study populations
 Tablica 3. Broj zuba, zdravih zuba i zuba u okluziji u populaciji nacionalnih studija

	Age group (years)	Country						
		A	BY	G	H	I	PL	SLO
Number of teeth	55 to 64	18.4 ns to I, BY	18.4	14.7	12.7 ns to PL	18.5 ns to BY	12.5	16.0
	65 to 74	13.9 ns to I, BY	13.0	10.7 ns to PL, SLO	8.3 ns to SLO	15.1	10.2 ns to SLO	9.5
	> 74	12.4 ns to I	-	8.3	6.4 ns to PL	11.6	7.0	-
Number of sound teeth	55 to 64	7.0 ns to G, I, SLO	11.7	7.3	4.2	8.0	5.7	6.3
	65 to 74	4.9 ns to G, PL	7.2	5.3	2.9 ns to SLO	6.5 ns to BY	4.6	2.9
	> 74	5.6 ns to I	-	4.1	2.1 ns to PL	5.1	2.9	-
Number of teeth in occlusion	55 to 64	13.7	6.9	10.0 ns to H, SLO	9.5	16.3	7.0 ns to BY	10.0
	65 to 74	8.2	3.4	6.1 ns to H	4.9 ns to BY PL, SLO	12.6	5.0	3.8 ns to BY
	> 74	7.9 ns to I	-	3.7	2.5 ns to PL	7.0	2.5	-

* Statistical comparison between countries only shown for non-significant (ns); significant level was taken for 5%.

occluding for the Hungarian and Polish subjects, and only 3 for the Byelorussian and Slovenian subjects. Dentate subjects of the oldest age group had about 12 teeth in Italy and Austria, in Germany 8, in Poland 7 and in Hungary 6, of which one third to one half were sound. Most teeth in occlusion were found in Austria (7.9) and Italy (7.0) and the least in Hungary and Poland (2.5). The differences shown in the ranked order of the countries are statistically significant.

Coronal caries was described by the DMFT index and its components (Table 4). In all countries caries prevalence was high; an increase of the DMFT from age group to age group was apparent in all national samples. The mean DMFT value varied between 22 and 28 for the youngest age group, between 27 and 30 for the middle and between 28 and 31 for the oldest age group. The existing differences, which are not significant when comparing the countries, are listed below the numerical values. While the D and F values decreased with age, the M component increased continuously. The greatest number of carious teeth in all age groups was

recorded for Italian subjects. In all other countries an average of 1.1 to 3.0 carious teeth were found, whereby the differences between countries become smaller with the increasing age of the subjects. For the 65-74 year olds 1 to 2 teeth were carious and for the >74 year olds about 1. The M component reflected the tooth loss with increasing age. A comparison of M values showed again for all age groups a nearly equal loss of teeth, with the exception of the Italian and the Austrian sample; for the latter the loss of teeth was less pronounced. In the youngest age group an average of 14 to 22 teeth were missing, in the middle group 19 to 28 and in the oldest 24 to 30 teeth. Comparable F values with 6 to 8 teeth were found for the samples from Austria, Slovenia and Italy for the 55-64 year olds. On the average 3 to 4 filled teeth were recorded in Germany, Poland and Hungary. This ranking of countries is the same, even though with reduced F values, in the middle and the oldest age group.

Taking into consideration the continuously increasing loss of teeth concomitant with age, the statement concerning the distribution of periodontal di-

Table 4. Number of decayed (D), missing (M) and filled (F) teeth in the dentate national study populations
 Tablica 4. Broj kvarnih (D) izgubljenih (M) i punjenih (F) zuba u populaciji nacionalnih studija

	Age group (years)	Country							
		A	BY	CZ	G	H	I	PL	SLO
D	55 to 64	1.3 ns to G	1.9 ns to BY	1.1	1.7	3.0	3.8	2.8	2.1 ns to BY
	65 to 74	1.0 ns to G, H	1.6 ns to H, PL, SLO	0.7	1.2 ns to H	1.2 ns to BY, SLO	3.2	1.9 ns to BY, SLO	1.7 ns to BY
	> 74	0.8 ns to G, H, PL	-		0.8	0.7	2.9	1.2	-
M	55 to 64	15.6 ns to BY, SLO, I	15.5	21.0	20.3	21.0 ns to PL	14.6 ns to BY	21.8	17.0
	65 to 74	20.4	22.6	24.1	25.3 ns to PL, SLO	27.7	18.8	25.5	24.3
	> 74	24.4 ns to I	-	28.3	28.7 ns to PL	30.1	23.6	28.8	-
F	55 to 64	8.8	4.4	3.2	4.2 ns to H, BY	3.9 ns to BY	6.1	2.7	6.9
	65 to 74	6.5	2.6	2.2	2.2	1.3 ns to PL	4.3	1.7	2.9 ns to BY
	> 74	3.4	-	1.0	0.9	0.5	1.8	0.6	-
D M F	55 to 64	25.7 ns to G, SLO	21.8 ns to SLO	25.0	26.2	27.9	24.4	27.4	26.2
	65 to 74	27.9 ns to BY, G	26.8	26.8	28.7	30.2 ns to SLO	26.3 ns to BY	29.0	29.9
	> 74	28.6 ns to I	-	29.6	30.4 ns to PL	31.3	28.3	30.7	-

* Statistical comparison between countries only shown for non-significant (ns); significant level was taken for 5%.

sease in all samples of the study is of limited relevance. Periodontal diseases were found for more than 90% of all subjects in all age groups and samples (Figure 2). Healthy periodontal conditions were observed in the old age populations of Germany and Poland, the two largest national samples, in the youngest and middle age groups in 1.6 and 3.1% respectively; for the >74 year olds the percentages were 3.4 and 5.3. Irrespective of age, bleeding was diagnosed for 4 to 7% of the subjects of both countries. Calculus was observed for about 20% of all Polish and about 30% of all German adults in the respective age groups. The dominant symptom in all national samples and age groups with the exception of Hungary were shallow pockets; in Hungary there were progressive stages with deep pockets. While in Austria, Germany and Poland even for the >74 year olds deep pockets were found only in 15 to 30% of the samples, in Hungary they amounted

to 55% of all cases. In the Byelorussian sample the percentage of subjects in the middle age group with shallow and deep pockets (49.8 and 49.1%) was almost even; for the youngest age group in 20% of the cases more subjects with shallow than with deep pockets were recorded.

Discussion

The patterns of oral diseases, their occurrence and distribution are according to O'Hickey et al. (15) the result of deficient dental care for old people. This deficit of care causes a progressive destruction of the dentition, characterised by loss of teeth, periodontal disease and increasingly by lesions of oral mucosa. Studies performed worldwide confirm again and again, irrespective of large differences in study methods and procedures, insufficient

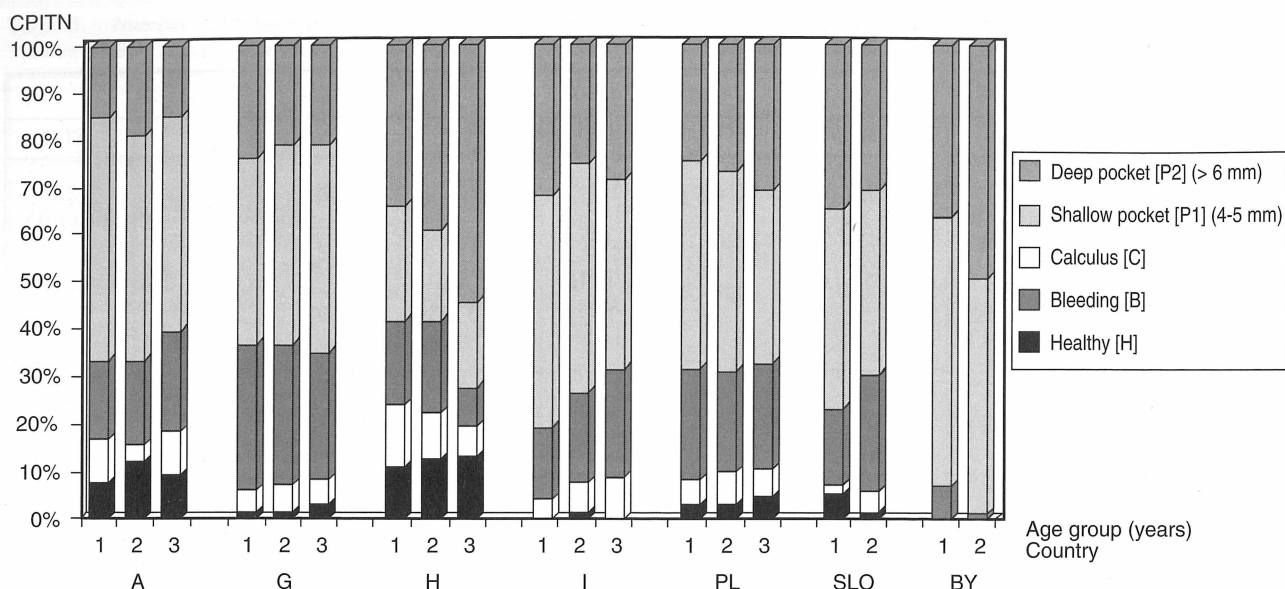


Figure 2. Periodontal status (CPITN) in the dentate national study populations
Slika 2. Periodontalni status (CPITN) u populaciji nacionalnih studija

oral health among the old age population (5,6,9,16,17). Tooth loss and edentulism were the dominant characteristics of the oral health status of the old age populations of all participating countries. A comparison with other studies showed that edentulism among the 55-64 year old German, Hungarian and Polish adults corresponded with the proportion of 19% of edentulous subjects in the United States (1989) (2). For the 65-74 year olds and the >74 year olds their proportion was higher than the 28% and 41% computed for the United States (2). Comparable, however, was the percentage of 65-74 year old edentulous subjects in Byelorussia and Slovenia. In the Netherlands edentulism increased from 49% for the 55-64 year olds to 65% for the age group 65-74 years (8). Slade et al. (7) found among the 65-74 year old inhabitants of Ottawa 34% and for the >75 year olds 38% edentulous subjects. The highest rate of edentulism was reported for the >65 year olds in the United Kingdom with 88% and 84% for the >60 year olds in New Zealand (18). The edentulism reported by Feldmann et al. (19) of 6.2% for 55-64 year old, of 15.3% for 65-74 year old and 11.1% for >75 year old Swiss subjects for the year 1988 was rated as distinctly too low by the authors themselves after a comparison with other Swiss studies. Significant sex differences in the prevalence of edentulism to the disadvantage of women were discovered in this multinatio-

nal study only in the samples on Hungary and Poland for the oldest age group and in the youngest and middle age group respectively. Likewise, other studies reported higher edentulism for women than for men (5,6,9).

Prevalence of edentulism is generally considered as a rough but instructive indicator of oral health (20). An improvement of the oral health status of the elderly through a reduction of edentulism to a maximum of 25% for the over 65 year olds, according to the recommendations for oral healthy by the year 2000 (21) does not seem realistic for all the countries, given the present observations. A prognosis of edentulism is hardly possible, considering the changes in dental services with the development of private practice in East European countries. In the long run the only alternative to the reduction of edentulism seems to be a preventive oriented and tooth preserving strategy of dental care, integrating already the 35-44 year olds.

The increase of edentulism was connected with the decrease of the number of remaining teeth in all national samples with increasing age. For the 55-64 year olds between 12 (Hungary, Poland) and 18 teeth (Austria, Byelorussia, Italy) were recorded. Despite these differences a comparable loss of 6 teeth on average was observed from the youngest to the oldest age group in all countries. Likewise with increasing age the number of sound teeth and teeth in

occlusion decreased in correlation with the number of teeth. In the present study the number of natural teeth in Austria, Italy and Byelorussia was found to be comparable to that in the Swiss old age population (19). The number of teeth in the 65-74 years and >75 years age groups, calculated by Palmqvist (5) for a Swedish population, corresponded with the number computed for these countries. Following this trend a Dutch study found 17.2 teeth for the age group 55-64 and 14.3 teeth for the 65-74 year old subjects (8). Comparison between East and West European countries indicated that the number of teeth in West European countries is approximately between 4 and 5 teeth higher for the elderly. The global goal 5 according to which 50% of the >60 year olds should possess 20 natural teeth and the proportion of edentulous subjects should not exceed the 25% limit, appears to be unattainable for Germany, as well as for the other countries participating in the multinational study. This hypothesis is supported also by the level of the observed DMFT. It increased in all old age populations continuously with increasing age; decisive, however, was neither the DT nor the FT value, but the MT-value. The latter showed an increase of 7 to 9 teeth in the national samples. With comparable DMFT values the D and M component were considerably lower and the F component distinctly higher for the 55-64 year old and the 65-74 old Swiss adults. Even in an exemplary country of prevention like Switzerland the above-mentioned goal seems hardly attainable.

In order to characterize the periodontal health status and treatment need Ainamo et al. (23) introduced the Community Periodontal Index of Treatment Needs (CPITN) which in the meantime has become the accepted index in epidemiological studies. In order of priority the 35-44 year old age group was examined first, as the periodontal health status in correlation to the loss of teeth was of clinical-practical as well as of scientific interest. The present study showed that the evaluation of the periodontium is of decreasing relevance due to the age-related loss of teeth and the high rate of edentulism in today's old age populations of participating countries. Considering these facts the presence of perio-

dontal disease of about 90% in all age groups and for all samples was very high. This confirmed earlier studies, concluding that 60-100% of dentate elderly people need periodontal treatment (4,24,25). Substantial differences existed, however, concerning the frequency of individual symptoms among the old age populations. Nevertheless, a common trend of shallow pockets as the most frequent symptom appeared in all samples and age groups with the exception of Hungary. The frequency of the other symptoms varied up to 20% between the national samples. The Byelorussian sample, e.g., did not include subjects with healthy periodontium or periodontal bleeding. The findings for the >74 year old Austrian subjects were comparable to those of Finnish adults older than 76 years, examined by Siukosaari et al. (26). A healthy periodontium was found for 8% of the subjects, bleeding for 7%, 41% had calculus, 34% shallow pockets, and 10% deep pockets. However, the percentages of the populations with healthy periodontal of the remaining teeth, which were found by Lappalainen et al. (27) in a Finnish old age population corresponded to those of the >74 olds in the German sample. Taken together the present results suggest that the loss of teeth with increasing age is not necessarily a consequence of periodontal destruction, but more likely a problem resulting from caries.

The tooth-related results of the adult population of East and Central European countries demonstrate that the life-long preservation of natural, sound, and functional dentition is currently not realized. The oral health of the elderly is below acceptable levels in all participating countries (28), which needs to be changed in the years to come. Planning, organization, and realization of measures for the improvement of oral health always requires, however, analyses of the situation as in the present study. Therefore a reduction of the proportion of edentulous subjects below 20% and the preservation of 20 functional natural teeth for 40% of the age group as a European goal for the year 2010 has been recommended. The Report (28) brings the acute problem of dental care to the attention of dentist and politicians and makes conceptual recommendations regarding necessary solutions of major areas of concern.

BEZUBOST I DENTALNI STATUS U STARIJOJ POPULACIJI OSAM EUROPSKIH ZEMALJA

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Adresa za dopisivanje:

Sažetak

U okviru multinacionalne studije određivano je stanje oralnog zdravlja i potreba za tretmanom kod 19.845 ispitanika u dobnim skupinama 55-64, 65-74 i više od 74 godine iz Austrije, Bjelorusije, Njemačke, Mađarske, Italije, Poljske, Slovenije i Češke Republike. Stanje oralnoga zdravlja odrasle populacije svih zemalja je karkterizirano velikim stupnjem gubitka zubi i bezubošću. Primjećen je visok stupanj ovisnosti dobi o oralnome statusu. Prevalencija karijesa za sve dobne skupine je velika sa velikom M komponentom. U 90% svih ispitanika prisutna je parodontna bolest. U svrhu poboljšanja stanja oralnog zdravlja u populaciji starije dobi prijeko je potreban koncept preventivnih mjera za redukciju karijesa i parodontne bolesti adekvatan životnoj dobi kao i odgovarajuće smjernice tretmana s ciljem što dužeg očuvanja prirodnih zubi.

Ključne riječi: starost, bezubost, karijes, parodontna bolest

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