

# Assessment of periodontal status and treatment need in the population of Belarus

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## Summary

The aim of this study was to assess periodontal status and treatment needs among the population in Republic of Belarus.

**Material and method.** Epidemiological survey was undertaken among 2007 subjects in 9 age groups (15, 16, 17, 18, 20-24, 35-44, 45-54, 55-64, 65-74 yrs). Periodontal status and treatment needs were assessed according to WHO criteria. All data were recorded in the special form. Statistical analysis was performed using the methods of variation statistics and Anova.

**Results.** The prevalence of periodontal pockets 4-5 mm (CPITN "3") increased from 0.85% in 15 yrs old to 21.69% in 35-44 yrs. The deep periodontal pockets (CPITN "4") were registered in 35-44 yrs in 3.3% of examined subjects, excluding sextants (CPITN "x") - in 14.46%. In the 65-74 yrs. age group the periodontal pockets (CPITN "3", "4") were found in 13.04% of subjects. About 80% of sextants were excluded from the survey.

All surveyed people needed oral hygiene instructions and prophylaxis. Surgical treatment needs were as follows: 0.85% in 15 yrs, 24.9% in 35-44 yrs, 36.9% in 45-54 yrs, 13.7% in 55-64 and 12.9% in 65-74 age group. The percentages of persons who needed complex dental care (surgical and prosthetic) were 39.3% in 35-44 yrs, 59.2% in 45-54 yrs, 76.3% in 55-64 and 92.6% in 65-74 yrs.

**Conclusion.** The present study indicates that there are high prevalence and severity of periodontal diseases and treatment needs among population of Belarus.

**Keywords:** periodontal status, treatment need, sextant.

## Introduction

Periodontal diseases are the most common human dental diseases affecting the population all over the world. As the prevalence and severity of periodontal diseases are high among population, prevention and treatment of these diseases are one of the most serious problems of modern dentistry. WHO has recommended the CPITN to unify the data of the prevalence and the severity of periodontal diseases in different countries [1]. The results of more than 500 research projects in different countries of the world have

been made available of late. Periodontal status becomes worse with age [2]. Gingivitis is detected in 40-50% of population, the prevalence of generalized periodontitis is varying from 5 to 20% in different countries. [4,5,6] Epidemiological surveys studying the tendency of periodontal diseases and the need of periodontal treatment are necessary in order to plan effective oral health service.

The **aim** of this study was to assess periodontal status and treatment needs among the population in Republic of Belarus.

## Materials and methods

Epidemiological survey was undertaken among 2007 subjects distributed in 9 age groups (15, 16, 17, 18, 20-24, 35-44, 45-54, 55-64, 65-74) in different regions of Belarus in 2002-2003 [3]. The number of examined persons in every age group was 118, 320, 287, 135, 389, 245, 170, 205, 138 accordingly. Periodontal status was assessed using CPITN. The treatment needs were assessed according to WHO criteria. All data were recorded in the special examination form. Statistical analysis was performed using the methods of variation statistics and ANOVA.

## Results

The mean number of healthy sextants per person (CPITN "0") decreased from  $1.07 \pm 0.11$  SE in 15 yrs old to  $0.19 \pm 0.02$  in 35-44 yrs old. There were no people with healthy periodontal tissues in elder age groups. Gingival bleeding (CPITN "1") was varying from  $0.18 \pm 0.04$  in 15 yrs old to  $0.57 \pm 0.07$  in 35-44 yrs old (mean number of sextants involved). The data on prevalence and severity of dental calculus (CPITN "2") were high in all age groups. CPITN cores reflecting the dental calculus were as follows: in 15 yrs old –  $97.46 \pm 1.45\%$  of examined subjects and  $4.72 \pm 0.12$  of the mean number of sextants involved; in 35-44 yrs old –  $60.33 \pm 3.15\%$  of examined and  $4.27 \pm 0.12$  of the mean number of sextants; in 65-74 yrs old –  $7.25 \pm 2.21\%$  and  $1.60 \pm 0.19$  of the mean number of sextants.

Periodontal pockets 4-5 mm (CPITN "3") were found in all age groups. The prevalence of periodontal pockets 4-5 mm (CPITN "3") increased from  $0.85 \pm 0.84\%$  in 15 yrs old to  $21.69 \pm 2.66\%$  in 35-44 yrs and  $31.18 \pm 3.55\%$  in 45-54 yrs. The mean number of sextants per person with shallow pockets (CPITN "3") varied from 0.01 in 15 yrs to  $0.68 \pm 0.08$  in 35-44 and  $1.03 \pm 0.11$  in 45-54 yrs. In elder age groups

shallow periodontal pockets were registered rarely: in  $12.18 \pm 2.12\%$  in 55-64 yrs and in  $11.59 \pm 2.13\%$  in 65-74. The mean number of sextants per person was  $0.46 \pm 0.06$  and  $0.56 \pm 0.11$  accordingly. Deep periodontal pockets more than 6 mm (CPITN "4") were registered in 35-44 yrs. in  $3.31 \pm 1.15\%$  of examined subjects and the mean number of sextants per person was  $0.07 \pm 0.03$ . It was found that there were excluded sextants in the same age group (CPITN "X"). They were registered in  $14.46 \pm 2.26\%$  of examined people, with a  $0.22 \pm 0.04$  mean number of sextants per person. In the 65-74 yrs. age group the periodontal pockets (CPITN 3, 4) were found in  $13.04 \pm 1.5\%$  of people and the mean number of sextants per person was  $0.64 \pm 0.07$ . But in this age group about 80% of people were excluded from the survey as a large number of teeth were missing. This fact is showing teeth loss. The structure of periodontal index CPITN among examined population is shown in *Table 1*.

All examined people needed instructions on oral hygiene and professional tooth cleaning. Surgical treatment need was as follows: 0.85% in 15 yrs, 24.9% in 35-44 yrs, 36.9% in 45-54 yrs. Because of a large number of missing teeth ( $3.61 \pm 0.25$  excluded sextants per person in 65-74 yrs) a reduction in surgical treatment need was registered among elderly. Only 13.7% of examined people in 55-64 and 12.9% in 65-74 age groups needed this care. The percentages of persons who needed complex dental care (surgical and prosthetic) were 39.3% in 35-44 yrs, 59.2% in 45-54 yrs, 76.3% in 55-64 yrs and 92.6% in 65-74 yrs.

## Conclusion

Periodontal disease does seem to be the major cause of tooth loss in Belarus. The present study indicates that there are high prevalence and severity of periodontal diseases among the population of Belarus.

Age groups	Number of examined subjects	Percent of examined people with CPITN codes "0-4"					Mean number of sextants involved per person						
		Periodontal pockets					Periodontal pockets						
		0	1	2	3	4	Excluded Sextants "X"	0	1	2	3	4	Excluded Sextants "X"
15 yrs	118	0.85±0.84	0.85±0.84	97.46±1.45	0.85±0.84	0	0	1.07±0.11	0.18±0.04	4.72±0.12	0.01±0.01	0	0
16 yrs	320	1.56±0.69	0.94±0.54	94.38±1.29	3.13±0.97	0	0	1.07±0.07	0.27±0.04	4.61±0.08	0.04±0.01	0	0
17 yrs	287	1.74±0.77	3.14±1.03	90.59±1.72	4.53±1.23	0	0	1.24±0.08	0.28±0.04	4.37±0.09	0.06±0.02	0	0
18 yrs	135	1.48±1.04	6.67±2.15	88.89±2.71	2.96±1.46	0	0	1.17±0.12	0.39±0.08	4.24±0.15	0.04±0.2	0	0
20-24 yrs	389	0.26±0.26	3.09±0.89	86.38±1.74	10.28±1.54	0	0	1.03±0.05	0.75±0.06	4.05±0.07	0.18±0.03	0	0
35-44 yrs	245	0	0	60.33±3.15	21.69±2.66	3.31±1.15	14.46±2.26	0.19±0.02	0.57±0.07	4.27±0.12	0.68±0.08	0.07±0.03	0.22±0.04
45-54 yrs	170	0	0	40.59±3.77	31.18±3.55	5.88±1.80	22.35±3.20	0.04±0.02	0.05±0.02	4.05±0.14	1.03±0.11	0.15±0.05	0.47±0.08
55-64 yrs	205	0	0	23.53±2.75	12.18±2.12	1.68±0.83	62.61±3.14	0	0	2.97±0.15	0.46±0.06	0.13±0.02	2.45±0.16
65-74 yrs	138	0	0	7.25±2.21	11.59±2.73	1.45±1.02	79.71±3.42	0	0	1.60±0.19	0.56±0.11	0.08±0.04	3.61±0.25

Table 1. The prevalence and severity of periodontal diseases (CPITN) among the population of Belarus, 2003

All the population in the Republic of Belarus evidenced a high periodontal treatment need. An improvement of periodontal care is necessary for all age groups. Our investigation demonstrates that it is neces-

sary to study periodontal diseases in different age groups. It will help to monitor periodontal diseases more objectively and make the periodontal treatment more effective.

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