

Oral health of the elderly people living under different conditions

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Summary

The *aim* of the study is to assess the differences between oral health of the elderly people living in the community and of the institutionalized elderly people.

Material and method. Seven hundred one subjects 65-74 years old in 6 elderly homes and four hundred sixteen subjects the same age living in the community were surveyed by calibrated dentists. Oral hygiene (OHI-S), DMFT, CPITN, prosthetic status and treatment need were recorded. Statistical analysis was carried out using ANOVA program.

Results. All surveyed patients displayed low or very low levels of oral hygiene (OHI-S 3.8-4.6), which associated with high prevalence and severity of periodontal disease. Among independently-living elderly persons, 5.5% had deep periodontal pockets, 18.3% -shallow pockets 50.5% - dental calculus, 0.5% - bleeding, av. 2.9 sextants were excluded from assessment, whereas in the group of institutionalized elderly people 5.7% of persons had deep periodontal pockets, 28.2% - shallow pockets, 17.3% - dental calculus, 0% - bleeding; av. 4.2 sextants were excluded from assessment. The Decayed, Missing, or Filled Teeth (DMFT) value was 22.0 ± 0.4 for active people and 26.0 ± 0.3 for institutionalized people. The objective need for prosthetic treatment on examination was 73-78%. In *conclusion*, oral health of institutionalized elderly people was worse and treatment need was higher as compared with the active people.

Keywords: elderly people, oral health, treatment need, prosthetic status and need.

Introduction

Throughout the world, a demographic revolution is underway. The world's population is aging. In Belarus the demographic trend is similar to most European countries. The proportion of elderly at age 65 year and more in the last ten-years period has increased from 10.6% in 1994 to 14.3% in 200 [1]. In Belarus the majority of elderly people live in the community. 10.4% of old adults are homebound or institutionalized. Hopes for longer life are often associated with negative views about old age, expectations of declining intellectual abilities and physical health, of social isolation and inac-

tivity [2,3]. One of the most important problems in the elderly is worsening oral health. Moreover poor oral health among old-age people is an important public health issue and a growing burden to countries worldwide [4,5]. Among elderly around the world, 20-80% are edentulous and 60-80% have immediate dental needs. Edentulism is highly associated with socio-economic status. Epidemiological studies show that persons of low social class or income and individuals with little or no education are more likely to be edentulous than persons of high social class and high levels of income and education [2,4].

Several epidemiological surveys of the

elderly population in Belarus have demonstrated that the average number of remaining teeth was 13.8, which is below the level recommended by WHO [6]. The major reason of missing teeth in the elderly was the unsatisfactory level of dental care in adult population. Percentage of edentulousness of older adults (65-74 years) in Belarus in 2004 was 15%, which is comparatively low among the same age group of population in most countries throughout Europe [7].

Belarus has a good social health system that includes dental care. Dental care is carried out in 1931 state polyclinics and dental surgeries; in 2002 there were 5482 dentists. During the last decade the private sector of the oral health system was developing: small dental clinics (2-4 dental units) and one unit dental surgeries. There are some two hundred such surgeries, majority of which are located in the capital. The private sector is providing dental care to 6-10% of the population. Annually nine millions dental fillings are provided free of charge in public health institutions [1]. On the average, each inhabitant of the country visited dentists 1.2 times a year. Unfortunately, geriatric dentistry is only beginning to develop within the field of general dentistry.

The aim of the study is to access the differences between oral health of the elderly people living in the community and of institutionalized elderly people.

Material and methods

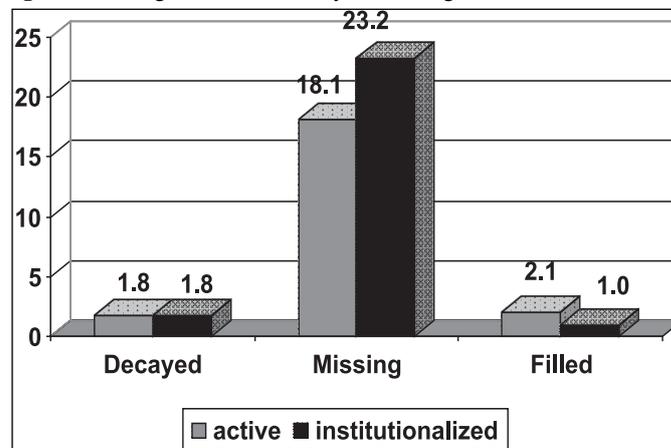
Seven hundred one subjects 65-74 years old (M-277, F-424) in 6 elderly homes and four hundred sixteen subjects of the same age (M-197, F-219) living in the community were surveyed by calibrated dentists. Oral hygiene (OHI-S, Green-Vermillion, 1964), DMFT, CPITN (Ainamo J., 1983), prosthetic status and treatment need were recorded in standard conditions, using the oral health assessment forms recommended by the WHO. Statistical analysis was carried out using ANOVA program (SE, SD, t and p criteria).

Results and discussion

According to oral health survey data average, 13.9 ± 1.7% of the elderly living in the community were edentulous. The average numbers of retained teeth among dentate subjects was 13.9 ± 0.5, excluded edentulous people. Among institutionalized elderly people 39.1 ± 1.9% were edentulous and the average number of retained teeth was 9.6 ± 0.4 (p < 0.05). All dentate subjects were affected by dental caries (*Figure 1*).

The Decayed, Missing, or Filled Teeth (DMFT) value was 22.0 ± 0.4 for active people and 26.0 ± 0.3 for institutionalized people (p > 0.05).

Figure 1. Average number of decayed, missing and filled teeth in old adults



The majority of teeth in the DMFT index were missing. Untreated dental caries was 1.8 (D of DMF) in two groups while the number of restored teeth was bigger in active people - 2.1 and 1.0 (F of DMF) ($p < 0.05$).

All surveyed patients had low or very low levels of oral hygiene, which increased from 3.8 ± 0.9 (OHI-S) in the group of active people to 4.6 ± 0.6 in the group of institutionalized elderly (OHI-S). Epidemiological studies show that poor oral hygiene or high levels of dental plaque are associated with high prevalence rates and severity of periodontal disease.

Among independently-living elderly persons, 5.5% had deep periodontal pockets (av. 0.1 sextants), 18.3% - shallow pockets (av. 0.5 sextants); 50.5% - dental calculus (av. 2.4 sextants); 0.5% - bleeding (av. 0.1

sextants); av. 2.9 sextants were excluded from assessment (Figure 2). Whereas in the group of institutionalized elderly people, 5.7% of persons had deep periodontal pockets (av. 0.4 sextants), 28.2% - shallow pockets (av. 1.1 sextants); 17.3% - dental calculus (av. 0.3 sextants); 0% - bleeding; av. 4.2 sextants were excluded from assessment.

Epidemiological studies show that among institutionalized elderly, 24.1% were smokers, whereas in the group of active people - 15.9%. In the same time the independent people visited dentists most often (Figure 3). One of the strongest predictors of utilization among elderly was whether or not people had natural teeth.

No dental check ups, few teeth present, and regular smoking have independent effects on progression of periodontal diseases in older adults.

Figure 2. Periodontal status (CPITN) of elderly in Belarus

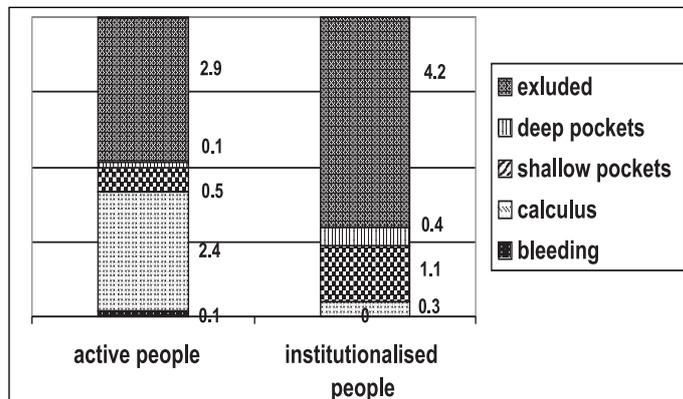


Figure 3. Utilisation of dental services by the elderly (%) according to period since last dental visit

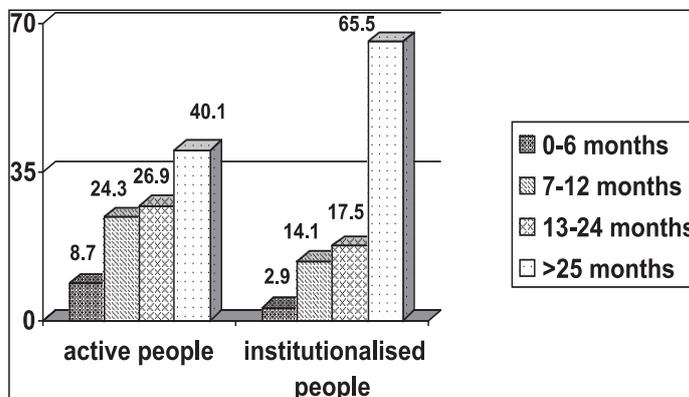


Table 1. Number (n) and percentage (% \pm SE) of subjects wearing denture and requiring prosthetic treatment

| Prosthetic status and need | | Active people | | | | Institutionalized people | | | |
|----------------------------|-----------------|---------------|-----------------|-----------|-----------------|--------------------------|-----------------|-----------|-----------------|
| | | Location | | | | | | | |
| | | Upper jaw | | Lower jaw | | Upper jaw | | Lower jaw | |
| | | n | % | n | % | n | % | n | % |
| Prosthetic status | No denture | 152 | 36.5 \pm 1.6* | 196 | 47.1 \pm 1.3* | 529 | 75.5 \pm 1.8* | 547 | 78.0 \pm 1.4* |
| | Partial denture | 48 | 11.5 \pm 1.1 | 43 | 10.3 \pm 0.8 | 42 | 6.0 \pm 0.9 | 37 | 5.3 \pm 0.8 |
| | Full denture | 63 | 15.1 \pm 1.3 | 49 | 11.9 \pm 0.9 | 88 | 12.6 \pm 1.3 | 61 | 8.7 \pm 1.1 |
| Prosthetic need | No denture | 165 | 39.6 \pm 1.6 | 135 | 32.5 \pm 1.5 | 183 | 26.1 \pm 1.7 | 149 | 21.3 \pm 1.6 |
| | Partial denture | 143 | 34.3 \pm 1.4 | 170 | 40.8 \pm 1.8 | 243 | 34.7 \pm 1.4 | 290 | 41.4 \pm 1.9 |
| | Full denture | 61 | 14.6 \pm 0.7* | 64 | 15.4 \pm 1.3* | 245 | 35.0 \pm 1.8* | 229 | 32.7 \pm 1.8* |

* - statistical difference between two groups ($p < 0.05$)

A total of 22 to 48% of elderly used removable dentures, in particular in the upper jaw (Table). Our results evidenced that a lot of institutionalized people did not wear partial and full dentures, in spite of the missing teeth component of 23.2, according to the DMFT index.

High percent of institutionalized people required full dentures, 35.0% in the upper jaw and 32.7% in the lower jaw. The majority of study subjects were subjectively very satisfied with their oral health and dentures, although the objective need for prosthetic treatment on examination was 73-78%.

The number of active people needing rehabilitation with full dentures is half of the institutionalized people, but the treatment need with partial dentures is the same in both categories of elderly.

According to the results of this study, the elderly are often unaware of their poor oral health. Older persons have had a stereotypical view of the dentist as a mechanically oriented individual who „pulled teeth and

made plates“. They also believed that dentures should last for a lifetime. Furthermore, as many older persons had dental experiences prior to the universal use of good local anesthesia and high-speed turbine handpieces, and they associate dentistry with pain. Therefore, it is not surprising that they seek care only if they are in discomfort or pain.

Conclusion

A high prevalence of dental caries and periodontal diseases among the study population were found. Oral hygiene for both teeth and dentures was inadequate among most patients. The oral health status of the elderly, especially the institutionalized elderly, was not satisfactory, and the demand for oral health care in general was low. At the same time, the treatment and prosthetic need were very high, especially among dependent people.

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