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QUALITY OF LIFE IN GERIATRIC PATIENTS WITH VARIOUS DENTITION DEFECTS

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ABSTRACT — **SUBJECT:** Population aging is a trend in modern society and elderly people who have gained social and professional status claim a significant position in it. Factors, such as dissatisfaction with dental appearance, confusion when smiling or talking, chewing and speech disorders, significantly complicate a person's daily activities and negatively affect self-confidence and social behavior. The need for social reforming to extend working activity has become an inevitable result of population aging. The **OBJECTIVE** of this research was outlined by the need to improve the quality of life in elderly patients, to extend social longevity.

This paper proposed provides information characterizing the structure of dental orthopedic morbidity in geriatric patients. The authors describe the results of their own research to identify the relationship between life quality indicators and dentition defect types in the group of patients under study.

METHODOLOGY: The research involved an observational longitudinal prospective study with a double survey of respondents. An alternative version of the OHIP 14 questionnaire was chosen as a tool for studying the life quality.

RESULTS: It was found that dentition defects have a significant impact on the life quality of elderly populations. **CONCLUSION:** Studying the structure of dental orthopedic morbidity can optimize provision of dental orthopedic care, improve life quality and prolong socialization of seniors.

KEYWORDS — geriatric dentistry, socialization, life quality.

INTRODUCTION

Over the past decades, interest in scientific research focused on studying the criteria for assessing the patients' life quality has significantly grown in modern science. As a result of the established global trend of natural aging of the population, social adaptation of elderly populations is becoming an urgent issue of modern scientific and practical medicine. The need for social reforming to extend working activity has become an inevitable result of population aging. Elderly people who have gained social and professional experi-

ence claim a significant position in modern society. Factors that may affect quality of life (dissatisfaction with dental appearance, confusion when smiling or talking, speech defects, inability to eat favorite food, distinguish nuances of taste) significantly complicate daily activities and negatively affect self-confidence and social behavior [1–4].

Dental orthopedic rehabilitation of patients in the older age group has a number of features. It is in them that dystrophic forms of dental diseases caused by the development of involutive processes of an aging organism, prevail over inflammatory forms. Another significant feature of gerontodentistry is polymorbidity – the presence of two or more long-term chronic somatic diseases in a patient manifesting itself in the mouths of the elderly. All this significantly impairs the quality of their life [5–11].

The data cited in the literature indicate 100% of the need in qualified dental orthopedic care on the part of the elderly. The need for single artificial crowns and post structures first occurs at the age of 19–30, reaches its maximum at 41–50, and by the age of 60 and older it becomes insignificant in the general structure of orthopedic fixtures. The need for dental orthopedic treatment with bridgework first appears at the age of 19–30, reaches its maximum at 40–50, and gradually decreases towards the age of 60 and older. The need for dental orthopedic treatment with removable dentures first appears at the age of 40–49. This characteristics is minimum in the age group below 50, gradually increasing and reaching a maximum in the age group of 70 years and older [12, 13].

Life quality (LQ) of older people is largely determined by dental health [14–29]. These are high prevalence rates of dental orthopedic morbidity in elderly populations, the need for medical and social rehabilitation in patients of this age group that determine the *relevance* of this paper. A systematic and multifaceted approach to the study of this problem may underlie the solution to the issues of organizing dental orthopedic care for this population group in connection with the socially significant social and labor reforms being consistently implemented in Russia and Europe.

Research objective:

to determine the structure of dental morbidity in the elderly patients and identify possible relationships between their life quality and dentition defect types.

MATERIAL AND METHODS

Standard international methodology for studying the life quality begins with drawing up a research protocol defining the goals and objectives of scientific work, criteria for including patients, calculating the minimum sample size and designing a study of the life quality in the elderly, which was defined as a classic observational longitudinal prospective study with a double survey of respondents.

An alternative version of the specialized questionnaire THE ORAL HEALTH IMPACT PROFILE, OHIP 14, was chosen as an *optimal tool* for studying the life quality of dental patients aged 60 and older.

The study group included 1,000 geriatric patients divided into three groups¹. The *Elderly People* group of was formed by 408 dental patients aged 60–74, which amounted to 40.8%±0.44. The *Old People* group included 481 patients aged 75–89 years, which amounted to 48.1%±0.87. *Long-livers* — patients aged 90 and older — constituted the smallest group of 111 people, 11.1%±0.83 (Fig. 1).

In our study group 573 women (57.3%±0.83) slightly prevailed over 427 men (42.7%±0.87) (Fig. 2).

Completion of the primary medical documentation which includes informed voluntary consent to personal data processing, medical diagnostic and therapeutic measures, and participation in a scientific experiment, followed by a dental medical examination, filling out a clinical card and a specialized questionnaire for studying life quality.

Dental orthopedic treatment was provided within the required scope during the second and subsequent visits.

The total number of orthopedic fixtures manufactured and installed was 9,843 pcs., of which 3,016 were pin-type, 3,336 artificial crowns, 1,410 bridges, 957 removable plate dentures with partial loss of teeth, 404 clasp dentures, 720 removable dentures with total loss of teeth (Fig. 3).

Four months after the end of dental treatment, the patients were asked to re-fill a specialized questionnaire for studying life quality. Repeated questioning involved a remote survey.

The resulting data were analyzed by standard methods of statistical processing using PC software: MicrosoftExcel and Statistica 6.0.

RESULTS

All examined patients were divided into groups based on the Kennedy (1923) classification of denti-

tion defects convenient to use as a descriptive tool that displays dentition defects in detail. The number of patients with complete loss of teeth was calculated separately.

The structure of dental morbidity in the elderly populations admitted to a municipal dental orthopedic care indicates the following: out of 1,000 people - 120 people (12%±1.2) had bilateral terminal dentition defects, 260 people (26%±1.3) — unilateral terminal defects, 200 people (20%±1.3) — included defects in the lateral dentition parts, 60 people (6%±1.5) — defects in the anterior dentition parts, complete absence of teeth was observed in 360 people (36%±1.2).

A pattern was revealed when studying life quality of the examined patients. The nature of the dentition defect was important. The responses of patients with bilateral terminal defects (36.96±1.7), unilateral terminal defects (37.10±1.5) and included defects of the lateral dentition parts (37.09±1.7) have not shown statistically significant differences in comparison with each other. All patients noted poor life quality associated with a loss of taste for food, pain, as well as difficulty in eating, the need for selective choice of food, and interruption of eating. Elderly people noted irritability, difficulties in work and rest, they said that from time to time their life becomes uninteresting, and they are forced to *drop out* of it, refusing to socialize.

Patients with defects in the anterior dentition part more often noted social inconvenience, awkwardness and confusion when communicating with people, difficulty in pronouncing words, saliva splashing, a tight smile and lack of laughter. In general, their life quality is somewhat better (34.54±1.34) in comparison with patients with defects in the lateral dentition parts.

Patients with complete loss of teeth often noted a lack of taste in once favorite foods, the need to choose food due to missing teeth and difficulties in chewing food, interruption or premature completion of eating due to pain in the mouth and chafing. All subjects reported inconvenience, awkwardness and confusion when communicating with people, difficulties in pronouncing words, saliva splashing, tight smile and lack of laughter. They pointed out increased irritability and difficulties in everyday work and rest. They noted that their life has become less interesting and sometimes they completely *drop out* of it, denying themselves to communicate with friends and relatives. Life quality of patients in this group was rated as the lowest (42.12±1.92).

Four to six months after orthopedic dental rehabilitation a second survey followed to study life quality of the elderly patients who had managed to get used to new orthopedic dental fixtures.

All patients began to notice taste loss less often, had less mouth pain and chewing difficulties. The re-

¹ Age classification of the late period of human life (WHO, 1963)
45–59 — average age; 60–74 — old age; 75–89 — senile age; 90 and older — longevity.

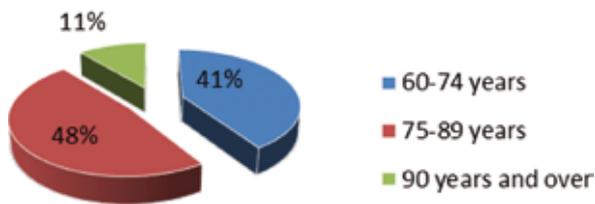


Fig. 1. Age structure of the respondents; (%)

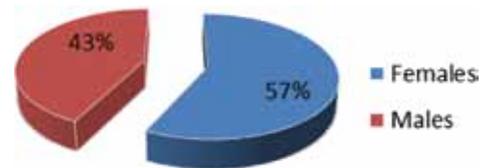


Figure 2. Gender composition of the respondents; (%)

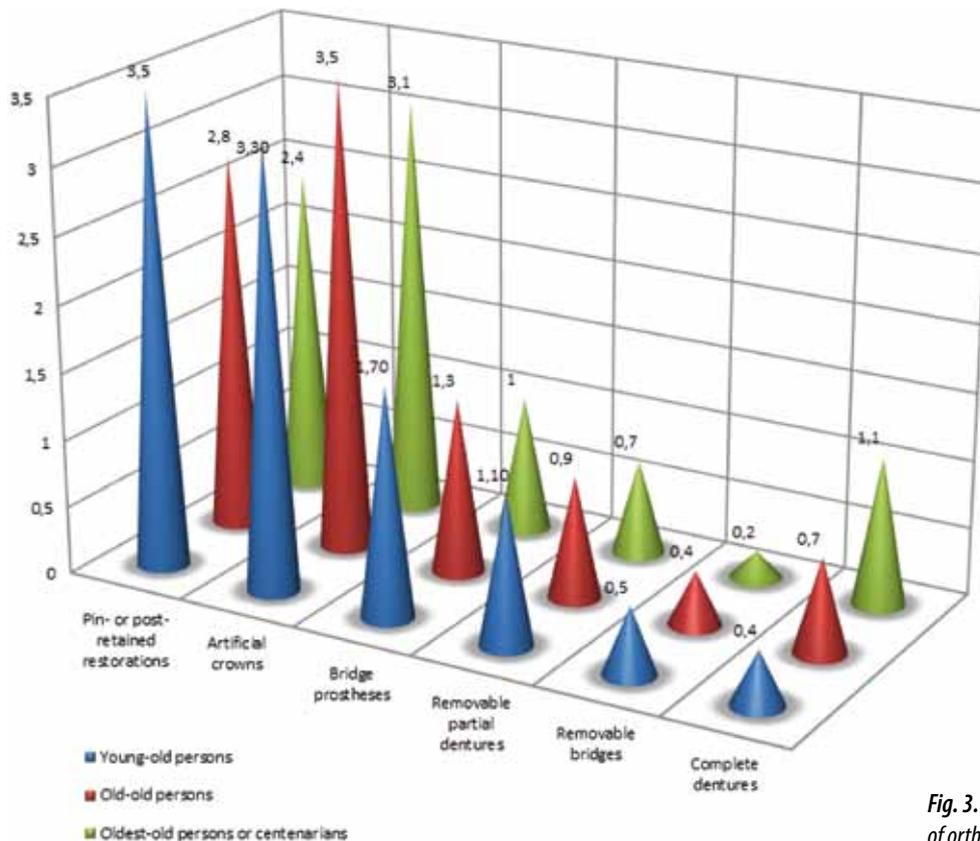


Fig. 3. Comparative analysis of orthopedic fixtures

spondents began eating better and interrupting meals less often. Less irritation and difficulties in everyday life and more confidence were reported. The life of the seniors has become more interesting and diverse.

Life quality of geriatric patients has changed after dental orthopedic treatment. Patients with bilateral terminal defects have shown improvements from 36.96 ± 1.7 to 25.35 ± 1.17 , $\Delta 11.61$, with unilateral terminal defects — from 37.10 ± 1.5 to 25.64 ± 1.15 , $\Delta 11.46$, and with included defects in the lateral dentition parts — from 37.09 ± 1.7 to 25.35 ± 1.17 , $\Delta 11.74$. Life quality of patients with the anterior dentition defects improved from 34.54 ± 1.34 to 23.09 ± 1.45 , $\Delta 11.45$. The worst life quality indicators were

shown by patients with complete loss of teeth from 42.12 ± 1.92 to 30.58 ± 1.51 , $\Delta 11.54$.

It should be noted that in patients with the lateral dentition defects, functional indicators of the questionnaire responded more actively to changes in life quality, in patients with the anterior dentition defects it were social indicators, in patients with complete absence of teeth — both functional and social indicators of the questionnaire equally evidenced changes in life quality.

After the dental orthopedic treatment, life quality in all our patients has significantly improved, as evidenced by the structure of OHIP-14 responses, namely, an increase in *never* responses from 4.94% to

22.70%, an increase in *almost never* responses from 6.42% to 42.24%, a significant decrease in "very often" responses from 34.36% to 6.46%. The total score of the questionnaire decreased by an average of 30.7%.

Conclusions:

life quality of elderly people is influenced by the presence and type of dentition defect. Studying the structure of dental orthopedic morbidity can optimize the quality of dental orthopedic care, improve life quality, and prolong social longevity.

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Conflict of interests:

The authors claim that there is no conflict of interests.

Statement of ethics

According to the international rules for clinical trials set out in the Helsinki Declaration of the World Medical Association (1975), and the international Draft Guidelines on Good Clinical Practice recommended by WHO (1956), as well as the clinical practice rules of the Russian Federation (order of the RF Ministry of Health dated 01/04/2016 No. 200n), protection of human rights was ensured in clinical trials with the participation of people. The protocol of this study was approved by the local ethics committee (protocol No. 5 dated 20/05/2016). Biomedical examination involved highly qualified trained personnel using certified equipment.

Consent to participate:

all patients who participated in the study filled out informed voluntary consent to personal data processing, medical diagnostic and therapeutic measures, and participation in a scientific experiment.

Availability of data and materials:

this work is a continuation of previous research.

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