

# The Influence of the Expensive Dental Prosthetic Practice on the Quality of Life

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## **Abstract**

The purpose of the article is to identify the influence of expensive dental aesthetic prosthetics on the quality of human life. The study was conducted in the January–April 2022; the whole sample included 120 dental patients living in the city of Belgorod (n = 60) and its suburbs (n = 60). Methods of collecting primary information were the following: the content analysis of patients' medical records, who received services for expensive dental aesthetic prosthetics; as well as the semi-structured interview of respondents (rehabilitants). Content analysis materials were processed and interpreted using the methods of compiling comparative tables and comparative analysis; data analysis of semi-structured interviews was conducted using the SPSS software package.

As a result of the study, the conclusions were made: firstly, the quality of a person's life can be improved through an objective component (for example, finding a more prestigious job) and a subjective component (by increasing self-esteem due to approval received from relatives and close friends); secondly, the quality of the person's life can be affected by the cost of dental care.

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## INTRODUCTION

In the modern world, most people suffer from the dental pathology. The prerequisites for its widespread occurrence are: the transition of humanity to a diet rich in carbohydrates and deeply processed types of food, as well as constant stress (Novitskaya, Drum, Gorbatovskaya, 2017). Against the background of a steady incidence rate, the number of lawsuits regarding the quality of treatment increases, amounting to 20-27%. This fact leads to the need to improve the quality of dental services and to take into account the psycho-emotional state of the patient (Borisova, Tolmachev, Ahmerov, 2017). The non-recognition of damage to health by the court does not mean the absence of moral suffering and psycho-emotional trauma of the patient. This leads to the requirement of compensation for moral damage, regarded as physical and moral suffering and manifested in such emotions as resentment, rage, humiliation, etc.

Dental services for adults, provided by both public and private clinics, are one of the least subsidized areas of health care even in many developed countries (USA, Australia, Europe), which reduce their availability and lend their demand to the population. The exception is privileged categories of people, or those who have a social package in the framework of employment, paid by the employer, or participants in corporate programs. We support J.D. Beck's point of view, who defined dental access as «opportunity for each individual to enter into the dental care system and to make use of dentists' services as the best way of preventing and controlling oral disease» (Beck, 1984).

According to K. Golubev and S. Narizhny, the moral sufferings are a person's emotional reactions to circumstances that he/she is unable to change, prevent, or adapt to them; they manifest on the mental level in the form of neurosis and lead to physical suffering, sensations of social and physical inferiority (Golubev, Narizhny, 2004; Emanuel, Sorensen, 2018; Gao et al., 2020; KC, 2021).

In the context of the issue, we have to clarify the concept of "quality of life", based on the term proposed by the World Health Organization: quality of life is considered as a multidimensional structure, which includes a person's perception of the following: his/her physical and psychological state; level of independence; relationships with other people; personal beliefs as well as his/her attitude to environmental characteristics (The World Health Organization Quality of Life, 2019).

From A.A. Novik and T.I. Ionova's points of view, "quality of life" is an integral characteristic that combines physical, psychological and social functioning of the patient, based on his/her own assessment (Novik, Ionova, 2012). The authors pay particular attention to the subjective aspect of assessment of one's quality of life that can lead to a false conclusion, because the distortion of reality is explained by the fact that in the world of intense competition between enterprises, costly aesthetic prosthetics does not always lead to positive changes regarding employment. Comparing the aesthetics of a smile before and after the expensive treatment, the person can come to a false conclusion about the possible achievement of a high quality of life.

The Russian scientist E. Kozhevatin argues about the subjectivity of the person's perception of the conditions of his/her existence; therefore, according to the author, the person cannot objectively appreciate the quality of life. Therefore, personal, deprived of social confirmation, the conclusion about the dynamics of the quality of life is not distinguished by certainty (Kozhevatin, 2009).

Quality of life presupposes that a person's psychosomatic state corresponds to his/her social status (Volkova et al., 2019). However, the following components are not taken into account here, for example, the desires and opportunities to improve the existing social status, to achieve greater demand for society (Araujo et al., 2020). There is a possibility of a long-term decline in the quality of life and the occurrence of negative emotional reactions among members of poor social groups after they have paid for expensive aesthetic prosthetics (Volkova et al., 2018).

According to research, made by I. Walker, S. Eapen-Simon and S. Gibson, dental health is one of the important public health issues in England. Key points include making changes in official documents governing public health care; the collaboration of all major stakeholders; conducting an examination of the quality of dental services by Public Health England (Walker, Eapen-Simon, Gibson, 2018).

A number of studies have proven the relationship between routine dental care and oral health-related quality of life (Malecki, Wisk, et. al., 2015; Reda, Krois, Reda, 2018; Naavaal, Griffin, et.al., 2020), the main subjects of study were the elderly and / or people with dental diseases, where «an oral disadvantage was defined as avoiding laughing or smiling because of unattractive teeth or gums, avoiding talking to someone because of unattractive teeth or gums or bad breath or being embarrassed by the appearance of teeth or gums» (Crocombe, Mahoney et al., 2013: 192-193).

In addition to that, J. Selander writes about current trends in increasing state attention to the problems of quality of life of the entire population and to issues of health care management (Selander, 2016). Prospects for improving patients' quality of life are associated with the presence of common organizational problems in the country and private difficulties arising from specific situations (Tscymbalystov et al., 2018). It is proposed to consider the issue of insurance not with the special services, but with the employer as well.

## **MATERIALS AND METHODS**

The research was conducted in January–April 2022 in Belgorod city and its suburbs. The authors used an interdisciplinary medical-social approach to considering the quality of life, which took into account the consumption of medical services (The World Health Organization Quality of Life, 2019). In this study, under the “expensive aesthetic prosthetics” we meant dental care, for which the patient paid at least 150 thousand rubles, which was equivalent to the average wage of a person, working in Belgorod region for six months.

During the study, the following questions were raised: Did the respectability of a person's appearance increase from the other people's points of view? Did the economic efficiency of the patient's professional activity increase? What were the payback periods for dental services? Answering the questions, it was important to take into account that the expensive aesthetic prosthetics was often a necessary but not sufficient resource for

improving the quality of life. One of the key questions was to reveal the nature of the impact of expensive aesthetic prosthetics on the rehabilitant's quality of life.

The sample included 120 dental patients living in Belgorod city (n = 60) and its suburbs (n = 60). Both groups of respondents were consisted of two subgroups, including men and women aged 30-40 and 51-65. There were two main criteria for the informants' selection: 1) patients who got expensive aesthetic prosthetics (at least 150 thousand rubles and more); 2) the informants who could participate at study after the treatment had been finished. Recruitment was carried out in the dental clinics of Belgorod city and in its surrounding areas.

Exclusion criteria were the following: generalized and/or severe periodontitis, increased tooth erosion, temporomandibular joint pathology, chronic general somatic pathology, inability to assess the results of prosthetics on the quality of his/her life.

The distribution of the number of respondents who participated in the study, according to various criteria, was presented in Table 1.

**Table 1 – Distribution of respondents by type of settlement, age and sex**

Type of settlement							
Belgorod residents				Residents of suburbs			
Age							
30-40		55-65		30-40		55-65	
Group							
I group		II group		III group		IV group	
Sex							
Male	Female	Male	Female	Male	Female	Male	Female
Rehabilitants (persons)							
15	15	15	15	15	17	14	14

The evaluation of the clinical-psychological state of the rehabilitators was carried out two months after the implementation of expensive aesthetic prosthetics using such methods of collecting primary information as content analysis of medical records of patients and semi-structured interviews.

### EMPERICAL RESULTS

Knowing about the tendency of orthopedic physicians to impose costly aesthetic prosthetics, rehabilitants were asked the question: "Did the orthopedic doctor tell you about the possibility of restoring the chewing apparatus in a low-budget way?", 13.3 % and 14.2 % of participants respectively aged 55-65 from both group (city and suburbs) gave positive answers. Anyway, most of them mentioned the negative reactions of orthopedic physicians about low-budget prosthetics, who had characterized it as "the technology of the stone age".

In addition to that, 53.3% of the respondents of the first group, 63.3% of the second group, 68.8% of the third group and 78.6% of the fourth group stated the very high cost of dental care and the need to reduce household spending for the next 2-6 months. Despite this, all rehabilitants denied receiving a loan for the needs of dental treatment; 30.8%

participants asked relatives or friends for a financial assistance for this purpose. The results of the survey of respondents regarding the impact of expensive aesthetic prosthetics on their quality of life were presented in Table 2.

**Table 2 – Respondents’ opinions about the impact of expensive aesthetic prosthetics on their quality of life**

Respondents’ opinions	Type of settlement			
	Belgorod residents		Residents of suburbs	
	Group			
	I	II	III	IV
	Age			
	30-40	51-65	30-40	51-65
	Score			
Positive expensive aesthetic prosthetics’ influence on quality of life	11 (36,6%)	7 (23,3%)	7 (21,9%)	0 (0)
Impact costly aesthetic prosthetics on employment / non-employment	7 (23,3%)	0 (0)	3 (9,4%)	0 (0)
	4 (13,3%)	7 (23,3%)	4 (12,5%)	0 (0)
Lack of costly aesthetic prosthetics’ influence on quality of life	10 (33,3%)	19 (63,3%)	14 (43,8%)	12 (42,8%)
Negative expensive aesthetic prosthetics’ influence on quality of life	2 (6,6%)	4 (13,3%)	8 (25,0%)	16 (57,1%)

After conducting expensive aesthetic prosthetics, the following results were obtained from patients regarding their opinion about their quality of life. The proportion of positive responses ranked according to the group of respondents: in the first group it was 36.6%, of which 23.3% claimed successful employment after dental care; in the second group – 23.3% without any changes in their social status; in the third group – 21.9%, of which 9.4% of respondents noted the transition to a more prestigious job; in the fourth group, none of the rehabilitators noticed the positive effect of costly aesthetic prosthetics on their quality of life. Thus, in general 8.3% patients were employed in a prestigious job after treatment, what might be an indirect confirmation of the improvement of their quality of life.

The amount of informants who subjectively estimated the improvement in quality of their life after expensive aesthetic prosthetics was the following: in the first group – 13.3%; in the second group – 23.3%; in the third group – 12.5%. However, 45.3% of the total sample could not formulate a clear opinion regarding the impact of expensive aesthetic prosthetics on quality of their life, citing the need for this procedure in any case.

The results of the survey revealed that many respondents noted the negative impact of expensive aesthetic prosthetics on their quality of life: in the first group – 6.6%, in the second group – 13.3%, in the third group – 25.0%, in the fourth one – 57.1%. Moreover, one person

from the second group and two people from the fourth one complained about a previously absent somatic of neurological nature.

## DISCUSSION

However, access to dental care alone is not always a tool to increase the frequency of visits to specialists, even with insurance or financial means. This fact is proved by the studies of L.A. Crocombe, G.D. Mahoney, A.J. Spencer, M. Waller, who conducted a comparative analysis between representatives of the wealthy civilian population and members of the Australian Defence Force. The latter not only had access to free high-tech dental care, but were also required to compulsorily visit the dentist at least twice a year, otherwise they could be fined, not allowed to work or study, have difficulty making the career (Crocombe, Mahoney et al., 2013).

The results of a 25-year longitudinal study by scientists from Norway and Sweden show the influence of socio-demographic and personal factors (age, education level, income) on the refusal of a visit to the dentist due to its high cost and lower living standards. The study involved 6346 people (the first wave took place in 1992, then the next ones in five years each). Subsequent waves of research have demonstrated «the frequency of avoidance of dental appointment due to cost declined from 7.0% (in 1997) to 5.4% (in 2017), whereas the frequency of oral impacts declined from 26.0% in 2007 to 24.0% in 2017» (Åstrøm, Lie, Mastrovito, Sannevik, 2020).

In J.F. Levesque, M.F. Harris, G. Russell M. Di Cesare, Y.H. Khang, P. Asaria's studies emphasis is placed on such characteristics as the quality and availability of primary dental care in the place of residence, in particular in the treatment of caries and periodontal diseases, the cost of medical services and the availability of transportation (Levesque, Harris, Russell, et. al., 2013; Reda, Krois, et al., 2018). In the United Kingdom and the United States the main reasons for not seeking dental care were the high cost of treatment and anxiety (Malecki, Wisk, et.al., 2015), as only 17 states cover comprehensive dental treatment for adults under the Medicaid (Center for Health Care Strategies, 2019).

People at risk tend to be those with low income, education, elderly, migrants, or ethnic and racial minorities (Vujicic, Buchmueller, & Klein, 2016; Naavaal, Griffin, Jones, 2020). For example, in the US only 12% of Medicare beneficiaries had dental insurance and less than half had visited a dentist in the last year due to a drop of income. According to official data, the average of \$540 is needed to fully cover the costs of one preventive visit to the dentist, treatment of periodontal diseases and caries in the range of up to \$1500 per year (Willink, Schoen, & Davis, 2016).

## CONCLUSION

Dental care is the biggest unmet medical need due to its availability for adults and the elderly, even in countries with a high level of socioeconomic development. Diseases of the oral cavity cause problems with eating, speech, interfere with employment, cause psychological complexes and reduce the quality of life of the population as a whole.

The quality of life is perceived by a person, firstly, as the possibility of acquiring a higher social and professional status and is characterized by the possibility of employment

and getting a prestigious job, and secondly, as the reason for receiving approval from the close environment.

The lack of confirmation of improving the quality of life, taking into account the significant financial costs of expensive aesthetic prosthetics, performed at a satisfactory clinical level, can play the crucial role in the occurrence of negative emotional reactions in rehabilitators of older age groups.

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