

## THE IMPACT OF GENERAL AND ORAL STATUS OF ELDERLY ON COMPLETE DENTURES AND QUALITY OF LIFE -LITERATURE REVIEW

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### ABSTRACT

**Introduction.** In the current demographic context and new technologies, it is necessary for medical services to adapt to the growing characteristics and needs of this important population segment, by establishing tools for assessment, prevention and appropriate, minimally invasive prosthetic treatments to improve oral status and systemically and respectively the quality of life of this category of disadvantaged patients, in numerical increase.

**Key words:** *elderly, prosthetic treatment, oral health, etc*

### INTRODUCTION.

Globally, the elderly population is growing. World Health Organization statistics show that by 2020, the number of people over the age of 60 will exceed the number of children under the age of 5, and by 2050, their proportion will increase from 12% to 22% [1].

In an attempt to analyze future trends in aging population, the latest population projections (developed by Eurostat, EUROPOP 2015) covered the period 2015-2080.

Thus, older people are expected to account for a growing share of the total population: people aged 65 and over will account about 29.1% of the EU population by 2080, compared to 19.2%. % registered in 2016 [2].

These demographic changes also lead to changes in the prevalence of chronic

diseases among the population, such as some cancers, chronic kidney disease or Alzheimer's dementia, hypertension, diabetes, chronic obstructive pulmonary disease or stroke.

Data from the literature indicate a clear association between physical health and oral status, with an impact on therapeutic approaches [3].

This article aims to analyze data from the literature on the association between general and oral status of elderly patients and their impact on complete dentures and quality of life. [4].

### LITERATURE REVIEW

The articles included in this literature study were obtained through a search in the PubMed database, published after 2000, using one or more of the keywords: \* oral health, \* general health, \*

elderly, \* frail, \* denture, \* conventional denture, \* overdenture, \* quality of life. Some articles identified by other methods, considered relevant for this topic, were also included. The results were sorted in order of relevance to the following issues related to the elderly: their classification, general status, oral status, correlation of age with general and oral status and quality of life.

### 1. Classification of elderly patients

At the third age, an adaptive crisis to the new bio-psycho-social conditions can appear in almost all individuals, due to the perspective of old age, when the organism endures and must compensate successively or simultaneously, traumas whose magnitude and duration vary.

In general, the elderly population is defined in the literature as individuals over the age of 60-65 years [5,6].

In developed countries, most people in the 60-75 age group are still in good physical condition, active and able to take care of themselves.

After the age of 75, they become more and more fragile, following a period marked by multiple disabilities, with a variable profile, from those in good health and active to those who have to deal with a multitude of chronic diseases [7].

Some gerontologists have recognized the diversity of old age by defining the subgroups of the elderly: young (60-69), middle-aged (70-79) and long-lived (80+) [8].

### 2. General pathology of the elderly patient

The elderly are not a homogeneous group, as it would seem at first glance.

Through the progressive decrease of biological capital, through its subjection over time to the influence of many aggressive environmental factors, the elderly groups have different morbidity characteristics than young people. The elderly and the elderly get sick more often, their illnesses have a longer duration and show a clear tendency to chronicity. The notions of physiological aging and early, early or pathological aging must be distinguished [8].

The clinical profile of elderly

patients has a number of characteristics less common in other age groups: multiple pathology, nonspecific and asymptomatic presentation of diseases, the existence of geriatric syndromes - geriatric giants: immobilization syndrome, instability, incontinence and mental impairment (which may occur in several diseases). To all this is added a concept that is still finding its place: frailty [8-10].

Frailty in geriatrics refers to those elderly patients prone to frequent decompensations that occur with minimal or even no stress.

The functional decline associated with aging results from several sources: biological aging, the action of environmental factors and the effect of various diseases. This entanglement makes it difficult to differentiate the effects of aging from those of other mechanisms, especially the effect of diseases with high prevalence in the elderly.

Recently, there has been talk of affecting oral health as a new geriatric syndrome, illustrated by the fact that plurimorbidity and the multitude of drugs administered to an elderly person can be associated with "dry mouth" syndrome (by xerostomia and hyposialia), or "burning mouth" syndrome, associated with common general impairments such as fragility, disability, cognitive impairment, etc [11].

From a dental point of view, Bertram and Banguena proposed three sub-entities independent of chronological age. In their opinion, there would be a period of presenility that begins with the loss of the first permanent tooth; the middle stage of senility, when there are a few more pairs of antagonists, enough for mastication; and advanced senility, characterized by the loss of all permanent teeth [12].

Periodontal disease is more common in the elderly and is associated with an increased likelihood of edentulousness [13].

The incidence of complete edentation was estimated to be between 7% and 69% internationally, with variations depending on the country and age, being favoured by a multitude of general and local factors.

Biological factors, related to the appearance of general pathologies (diabetes, rheumatoid arthritis, hypertension and coronary artery disease), are correlated with the presence of complete edentation [14].

Edentation is also correlated with some patient-related factors, such as addictive habits (smoking, excessive alcohol consumption) and untreated dental caries. On the other hand, complete edentation was associated with systemic consequences: nutritional and chewing difficulties, leading to a deficient diet (especially in fruits and vegetables), with a dietary deficiency of carotenes, folates, fiber and vitamin C, associated with an increased risk of obesity and cardiovascular disease; chronic inflammation of the gastric mucosa, with an increased frequency of duodenal and gastric ulcer and an increased risk of gastric and intestinal cancer, increased risk of diabetes, hypertension and stroke, chronic kidney disease, apnea [15]

### *3. Correlations between general and oral status in the elderly*

Connections between general and oral status have been proven many times in the literature, these being reflected by the term "oral-systemic link".

Chronic inflammation, even of low intensity (such as gingivitis or periodontitis), has been shown to contribute to secondary systemic diseases, with the immune system often deficient [16].

To illustrate the association between periodontal disease and cardiovascular disease, there are references such as the presence of pathogens *Porphyromonas gingivalis*, *Fusobacterium nucleatum* or *Aggregatibacter actinomycetemcomitans*, associated with periodontal disease, in atherosclerotic plaques on the intima of the arteries [17].

### *4. Prosthetic treatments in the elderly*

Given the prosthetic pathology that often occurred in the removable therapy of the elderly, whether it is institutionalized or not, it is necessary to take measures to prevent and eliminate / improve it, before building a new denture or reoptimizing the old ones.

Restoration of dental arches lost by edentation poses serious problems in the elderly, due to difficulties in achieving the stability of dentures, in the vertical dimensioning of the lower floor, due to the physiognomic appearance changed with age that can't be completely restored, difficulties in hygiene and maintenance of dentures either due to the ignorance or to the technique or due to the peculiarities characteristic of the third age [18].

In order to establish an individualized dental treatment for the elderly, it is necessary to have a thorough knowledge of the bio-psycho-social and spiritual characteristics of this category.

Many of the chronic diseases that the elderly have increase the risk of applying dental treatment or even contraindicate it and that is why it is very important to collaborate with the general practitioner.

We draw attention to some diseases specific to the elderly in which prosthetic rehabilitation encounters a series of complications and difficulties that derive from the pathological condition, namely: [19]:

◆ Parkinson's disease in which hypersalivation and spasmodic movements make it difficult to perform each stage of denture treatment;

◆ Plummer-Vinson syndrome (hepatic insufficiency with a deficient type of resonance on the mucous membranes) in which medical treatment must precede any prosthetic attempt.

Atrophy of the oral mucosa involves the indication of non-compressive impressions, the dentures having the mucosal face covered with a resilient material, and the triturating surfaces are reduced.

Moreover, it involves regular checks at least three times a year on adaptation and occlusion.

◆ senility translates into tissue and bone alterations; a delicate, dehydrated oral mucosa with a progressive thinning of the epithelial layers, due to poor cell nutrition and avitaminosis A, B and C.

A large part of the elderly population requires prosthetic treatment, the most common prosthetic treatments being dentures. Dentures are of several types (partial or complete, conventional or overdentures with additional means of retention on natural teeth / implants) adapted to the individual needs of patients, their acceptance, but also to the payment possibilities.

Conventional dentures are the most used especially in the elderly who find it difficult to withstand invasive procedures. [20].

The prosthetic treatment plan must take into account a series of criteria, which are specific to the elderly and condition the choice of oral rehabilitation therapy solutions. Thus, the analysis of the following criteria is required:

-the socio-economic criterion refers to the social conditions of the elderly and his economic possibilities to support a prosthetic therapy;

-the degree of geriatric risk concerns the degree of aging of the elderly, taking into account the psychosomatic changes at this age;

-the degree of autonomy allows the elderly to be assisted in the private practice system or at home;

-the biological criteria take into account the general pathology of the individual and require the inventory of psychosomatic disabilities;

-the technical criteria refer to the clinical and technical conditions that can be used during the treatment of the elderly;

-the technical-professional criterion takes into account the technical possibilities of the dental care unit that ensures the prosthetic rehabilitation.

-the mechanical criterion takes into account the existence of the remaining teeth, their quality, their degree of implantation, their arrangement on the arch and assessment of the muco-bone support.

-the hygiene criterion refers to the possibilities of the elderly to achieve an efficient hygiene of the oral cavity.

-the prognostic criterion is an objective that takes into account the current general condition and the patient's perspective.

##### 5. *Quality of life among elderly patients*

Oral health-related quality of life (OHRQoL) is a multidimensional construct that corresponds to the impact of oral health or disease on the daily functioning, well-being or overall quality of life of patients [21].

The association between general and oral health has not only an objective value, based on scientific arguments, but also a subjective one - individual assessment. Patients with satisfactory overall health had a better quality of life associated with oral health.

The patient's socio-demographic characteristics - such as educational or socio-economic level - can significantly influence the assessment of personal oral health and the quality of life associated with it.

Regarding the oral health, the quality of life associated with it is influenced by the presence or absence of edentation and dentures. In general, edentulous patients who need a denture have a lower quality of life compared to those who keep their natural teeth and do not need a denture.

Dental status is considered one of the strongest predictors of the quality of life associated with oral health [22]. The loss of a certain number of teeth contributes to the decrease of the quality of life, possibly by affecting the mastication, the self-image [23] and the social interaction [24].

In a comparative study of elderly patients with conventional dentures versus implant overdentures, 6 months after treatment, patients in the conventional dentures group reported an improvement in pain and emotional discomfort, while patients in the overdenture group on implants have reported improvements in relation to functional limitation, pain, physical and emotional disability [25].

The elderly is a deposit of morbidity accumulated throughout life, requiring

multiple and specialized care, including in the dental sphere, which by the nature of its activity combines the medical side with the social.

## CONCLUSIONS

Given the increasing average age of life and the increased frequency of chronic diseases among the elderly, a systemic perspective is absolutely necessary in addressing prosthetic treatment.

The pathology of the elderly patient worsens with age, increasing the number of general and oral diseases, the number of medications and medical interventions required.

Edentation and dentures have consequences both on orally and on general health and quality of life.

In the current demographic context and new technologies, it is necessary for medical services to adapt to the growing characteristics and needs of this important population segment, by establishing tools for assessment, prevention and appropriate, minimally invasive prosthetic treatments to improve oral status and systemically and respectively the quality of life of this category of disadvantaged patients, in numerical increase.

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