

THE DENTAL STATUS AND ITS ASSOCIATION WITH THE OBESITY IN THE CASE OF THE ELDERLY PEOPLE FROM THE SOUTH WEST OF TRANSYLVANIA

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Abstract: Loss of functional dentition imposes difficulties in chewing food and thus results in the patient's refusal, which may be detrimental to the nutritional and health status. The objective of this study was to investigate whether the edentation and teeth loss which were not restored by prosthetic treatment may be associated with obesity among the elderly in the area of medical-health coverage of the Military Emergency Hospital of Sibiu, located in South-Western Transylvania. We found a connection between the number of the teeth respectively the denture used and the weight gain results that shows that a better dental status represented by the presence of several teeth on the arch, even if they were not placed in a prosthetic obesity was associated with older people in South West of Transylvania. It has also been demonstrated a close relationship between dental status and adverse patient's systemic conditions that could have important clinical implications.

Cuvinte cheie: pierderea dinților, edentație, obezitate

Rezumat: Pierderea dentiției funcționale impune dificultăți în masticatie și astfel rezultă refuzul alimentar din partea pacientului, care poate fi în detrimentul nutrițional și al statusului sănătății. Obiectivele acestui studiu au fost de a investiga dacă pierderea dinților și edentația care nu au fost reabilitate prin tratament protetic, pot fi asociate cu obezitatea în rândul persoanelor în vârstă din zona de acoperire cu asistență medico-sanitară a Spitalului Militar de Urgență Sibiu, zonă situată în sud-vestul Transilvaniei. S-a constatat o legătură între numărul de dinți și folosirea protezei cu creșterea în greutate. Rezultatele arată că un mai bun status dentar reprezentat prin prezența a câtorva dinți pe arcadă, chiar dacă aceștia nu au fost introduși într-o lucrare protetică a fost asociat cu obezitatea persoanelor în vârstă din zona sud-vestică a Transilvaniei. S-a mai demonstrat o relație strânsă între statusul dentar defavorabil și condițiile sistemice ale pacientului care ar putea avea implicații clinice importante.

INTRODUCTION

Recent studies suggest that the loss of the teeth affect the quality of the diet and the absorption of the nutrients which can increase the risk for a wide range of diseases such as the: myocardial infarction, the cardio-vascular diseases, the tension after the menopause in women, psychical disabilities and the increase in the rate of mortality. Increasingly more an incomplete dentition can contribute to weight disturbances depending on the age and the features of the population. The effects of the loss of teeth towards the masticatory function can trigger changes in the diet which can be expressed in three different ways:

1. the persons with masticatory disfunction can choose to consume semiprepared nourishment instead of the healthy ones;
2. they avoid the nourishment which are hard to chew such as the: raw vegetables, the fresh fruits, meat and dried aliments;
3. soft or mashed aliments can be used.

There are different studies which indicate that the edentulous persons or with a few remaining teeth on the archade, eliminate from the diet certain essential nutrients such as: vegetables and fish, which are consumed in a lower quantity; the edentulous elderly people consume less proteins, nonsaturated polysaccharides, Iron, niacine, C vitamin, and they consume more saturated fat, products rich in cholesterol and calories comparing to the nonedentulous persons. Elderly

women with masticatory disfunction present low concentrations of the blood plasma and deficiencies in certain key nutrients which include carotenoids and 25 hydroxyvitamin D .

Previous studies show an association between the dental status and the antropometrical measurements, or the nutrition in the case of the persons who live independently, hospitalise and elderly institutionalised persons. The studies in the case of the elderly people who live independently have reported a dental status of 20 teeth or more, which increases the possibility of having a proper body mass index.

These studies have been done especially in the economically developed countries, where the dental services are much more accessible and thus the loss of a tooth or the complete edentation are rehabilitated through prosthetic works. There is a few information in the literature about the populations of the developing countries or with a medium level of development which present a significant loss of the teeth which are not replaced by prosthetic works, and this fact leads to the increase in the risk of obesity, overweight, poor diet or malnutrition.

The hypothesis of this study is that a poor oral status affects the alimentary habits and it is a risk indicator in obesity in the case of the persons who live independently.

MATERIAL AND METHOD

This study is based on the data gathered about the association between the diseases of the dental maxillary

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CLINICAL ASPECTS

apparatus and the general state of the elderly patients in the south west of Transylvania, area attributed to the Emergency Military Hospital Sibiu.

The population and the sample: A random sample of 432 participants has been chosen to which a basic oral examination has been done. The participants in this study have been patients of the medical sections of the Emergency Military Hospital Sibiu. Patients insured of the area belonging to the hospital or patients with insurance in the clinical ambulatory of Dental Medicine in the Emergency Military Hospital Sibiu. The patients have been randomly selected by two dentists and the consulted persons were aged between 60-65 and a separate group of over 65. All the participants had to be born of to have a stable inhabitation of more than 20 years in the geographical area included in the study. In a sample there have been selected medially and mental capable persons and all the gathered data have been introduced in a database. In order to access and to check the social demographical data of the participants in this study, there have been extracted data from the observation charts and the insurance documents of the EMH Sibiu.

Measurements: The basic evaluation comprises interviews which have been taken in the dental medicine practice or on the medical departments. The participants had informations regarding the objectives of the study and they had to give their permission for participation. A specialised statistician has read all the questions and has registered all the responses of the participants to the questionnaire, in a database. Besides interviews and oral examinations, there have been done anthropometrical measurements. The oral examination was done in the practices of the dental medicine ambulatory of the EMH Sibiu and in standard conditions (dental chairs, artificial light, and odontosopes), done by experienced dentists.

The medical, social-demographical data and the dental history: The social demographical data include the age, the family income, the education, the gender, the marital status, the geographical location of the participant and data regarding smoking. The current medical history has been reported and included 19 types of disease: high blood pressure, arthritis, cancer, ulcer, diabetes, depression, heart diseases, kidney diseases and respiratory disfunctions. If a person did not present any chronic disease or merely a disease, he was considered without comorbidities, and a person with two or more chronic diseases was considered with comorbidity.

The oral examination: The number of decays, the dental fillings and the edentations have been registered for all teeth including the third molar. The presence of the prosthetic works has been registered on both the arches according to the WHO criteria (weight, height, obesity). The type and number of the prosthetic works has been registered as being complete dentition so have the skeletal prosthesis. The data regarding the number of teeth and the dental prosthesis have been used to generate a new criteria regarding the dental status. The participants have been divided in edentulous who wear both the upper and the lower prosthesis, edentulous who wear only the upper prosthesis, persons with 1-8 unrestored prosthetically teeth through a fixed or mobile prosthesis, persons with 1 to 8 teeth which wore partially mobile prosthesis and persons with more than 8 teeth.

Anthropometrical measurements: The height and the weight have been used to establish the Body Mass Index and the height (cm), the height being measured with a portable studymeter, and the weight by using a digital scale.

Statistical analysis: The association between the obesity and the oral status has been evaluated according to the demographical status, the social-economical one as well as the

presence of the comorbidities, the smoking, with the help of the logistical methods.

RESULTS

The features of the studied sample showed that 27 % of the participants were obese, a higher percentage of participants were women, with an age between 60 and 81 years and which had a minimal income of 1000 RON. Most of the participants were or have been married and only 24% of the examined ones have more than 8 remaining teeth and 50.2 % were edentulous.

DISCUSSIONS

The results of this random study suggest that a poorer oral status represented through the partial or complete loss of the teeth without prosthetic rehabilitation is associated with obesity in the case of the elderly people who live independently in the south-western area of Transylvania.

The maintenance of the functional dentition up to an advanced age has an important effect in order to maintain a healthy body mass index.

The population of Romania particularly represents a good research choice for this study, since the complete or partial loss of the teeth is very often encountered, and those with a functional dentition represent only 12 %.

The edentation is known as a factor which increases the risk for overweight as well as for obesity, depending on the features of the population. The partial edentation with the presence of 1-8 teeth which are rehabilitated with a partially mobile prosthesis increases the risk for obesity.

In this population, even the replacement of the lost teeth with a mobile or partial mobile prosthesis, have a few positive effects such as the improvement of the mastication and apparently of the diet. Through the prosthetic rehabilitation treatments, it is not completely compensated the replacement of the functional dentition.

During the evaluation of the results, a few points must be taken into consideration, referring to the personal medical facts of the patient, the diagnosis of the chronic diseases by a specialist thus obtaining results regarding the comorbidities, the mental state, an important determinant in the weight gain and in obesity.

CONCLUSIONS

The relatively homogeneous population of the south west of Transylvania which has gone through a complete or partial loss of the teeth which have not been rehabilitated through prosthetic works, is prone to weight gain.

The implications of this study draw the attention over the increase in the interest and over the medical prophylaxis for the maintenance of the functional teeth on the arches

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