

THE PREVALENCE OF EDENTATIONS IN YOUNG ADULTS IN IASI

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ABSTRACT

The loss of teeth in the young adult population is closely correlated with the oral health status, oral health behaviors and socio-economic level. The **aim** of the study was to determine the prevalence of edentation among young adults in Iasi, Romania. **Materials and methods**: The study included a total of 285 students of the Faculty of Dental Medicine, „Grigore T.Popa” University of Medicine and Pharmacy Iași, aged between 22 and 26 years. The EGOHID System was used in order to evaluate the oral health status. The data were analyzed by gender, socio-economic level and oral health behaviors using SPSS 15.0 ($p < 0,05$). **Results**: Out of the 285 subjects 46,7% had partial edentation. The major reason of tooth loss was dental caries (96,5%) followed by traumatic injures (18,2%) regardless the socio-economic status. The most commonly extracted tooth was the first molar both on the upper and lower jaw. The high prevalence of tooth loss was significantly associated with a high carbohydrates intake frequency. **Conclusions**. The prevalence of tooth loss demonstrates the need of preventive programs in order to control the dental caries and to provide education for oral health.

Keywords: edentation, young adults, behaviors, prevention

INTRODUCTION

Edentation consisting in missing odonto-periodontal structures induces important anatomical and functional consequences and may occur at quite young ages. [1] Most of the studies on this topic appreciate that, generally, edentation may occur in more than 70% of the cases around the age of 16 , after the loss of the first permanent molar. [2,3] The young adulthood

period cannot be exactly defined according to different legal, maturational, occupational, sexual, emotional indices within a developmental or socialization perspective . Epidemiological studies demonstrated that this age group can be considered, generally speaking, the healthiest time of life but although oral health is mainly considered to be good their priorities and opportunities in this regard are little known.

Over the last decades the prevalence of tooth loss has dropped considerably as reported in several countries. [4,5] The edentations prevalence decrease is considered to reflect the improvement in oral health status of the population through preventive measures . [6]

On the strength of the main concern in recent trends on dental health care regarding the maintenance of the natural teeth, a reduction in the number of edentulous patients is expected. [8]

The **aim** of this a study is to assess the prevalence and incidence of edentation in young adults, to identify its aetiology and to evaluate the social and behavioural risk factors associated with teeth loos.

MATERIAL AND METHODS

This cross-sectional study included 285 students who attended the Department of Oro-Dental Prevention, Faculty of Dental Medicine, „Grigore T.Popa” University of Medicine and Pharmacy Iasi during the university year 2016-2017. Written consent for the anonymous participation in the study was previously obtained ensuring the individuals' data privacy.

The subjects were asked to complete a 12 items questionnaire referring to their concern about edentation consequences on mastication , aesthetics and quality of life, behavioral aspects regarding oral hygiene and diet (quantity and frequency of sweets intake),

the purpose of lost teeth replacement and treatment options.

Clinical examinations were conducted by calibrated dentists in accordance with the procedures and diagnostic criteria recommended by EGOHID II (European Global Oral Health Indicators Development II) including data on caries experience (ICDAS II), periodontal status (CPITN Index), orthodontic diseases, presence of edentation and type of prosthetic treatment, dental fluorosis (Dean Index) and oral cancer. The examination was performed with the usual examination instruments, plane mouth mirrors and periodontal probes .

The socio-economic status was evaluated considering the parents income. Statistical analysis was performed by using SPSS (IBM SPSS for Windows, Version 15.0; IBM Corp., Armonk, NY, USA). For the assessment of the correlations between the variables regarding gender, socio-economic level and the answers to the questionnaire the ANOVA and Pearson's Chi-square tests were used (statistical significance $p < 0.05$)

RESULTS

The study sample included 285 young adults aged between 21 and 26 years. Of these, 38% were males and 62% were females. Regarding the socio economic level 32,5 % belonged to high level and 67,5% belonged to the medium level. (Table 1)

Table 1. Study sample design by age, gender and educational level.

	%
Age	22,9 years (range 21-26 years old)
21-26 years	
Gender	
Female	62
Male	38
Socio-economic level (according to parents' income)	

High	32.5
Medium	67.5
Low	0

The prevalence of edentation was of 46,7%. Regarding the subjects gender the edentation prevalence was slightly higher in male subjects comparing to females (49.8%

and 43.7% respectively). According to socio-economic level by parents income the edentation prevalence was higher in subjects with medium level. (57.5%).(Table 2)

Table 2: Edentation prevalence by gender and educational level

		Edentation prevalence
Gender	Female	43.7%
	Male	49.8%
Parents income	Medium	57.5%
	High	42.5%

Statistical analysis of the data demonstrates that the majority of edentations involved one single tooth (40,8%) and two teeth (31,5%) (Fig.1) . 92.2 % of edentations are located in the lateral area , 2,7 in the frontal area and 4.3 include both areas.

From the total number of edentations only 51% were restored. The therapeutically approach was represented by fixed prostheses for all the restored edentations consisting in dental bridges.

Analyzing the causes of the edentations in relation with the absent tooth, it was

demonstrated that the most frequently extracted teeth were the first and second molar for complicated dental caries , followed by the premolars both on the upper and lower jaw. For the frontal area as cause of teeth extraction must be added the dental trauma, anodontia and inclusion. The distribution by gender shows that the frequency of edentation in male subjects is higher associated to dental caries and periodontal disease whereas in female subjects the edentation is mainly caused by orthodontic treatment and anodontia. (Fig.2)

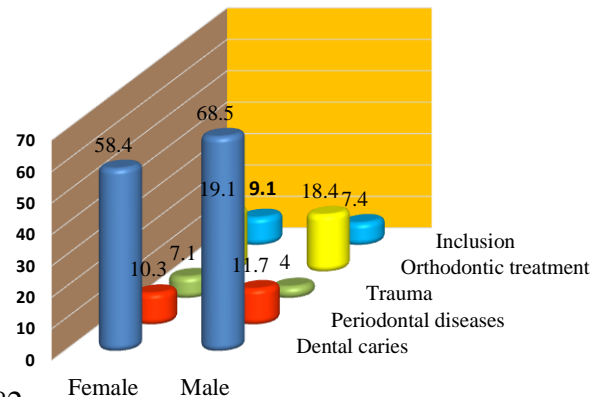
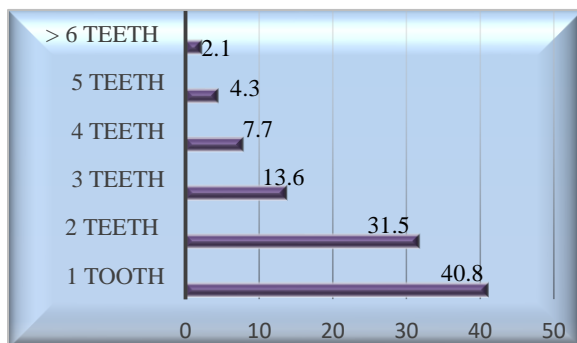


Figure 1. Number of missing teeth.

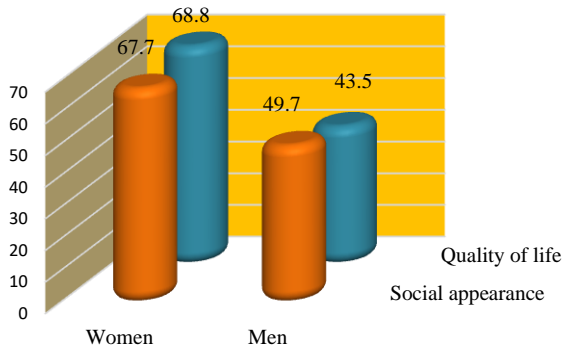


Figure 2 Reasons of teeth loss by gender

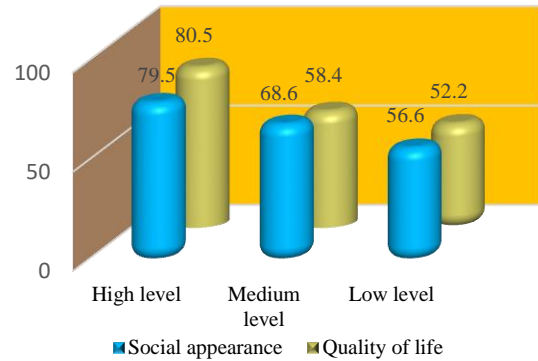


Figure 3. Subjects concern regarding edentation consequences by gender

The subjects answers regarding awareness for the implications of the teeth loss demonstrate that women are more concerned about the edentation consequences on social

Figure 4. Subjects concern regarding consequences by socio- economic level

appearance and quality of life. (Fig. 3) The highest concern is, also, associated to high socio-economical level. (Fig. 4)

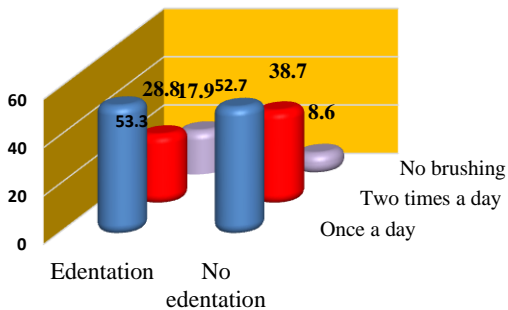
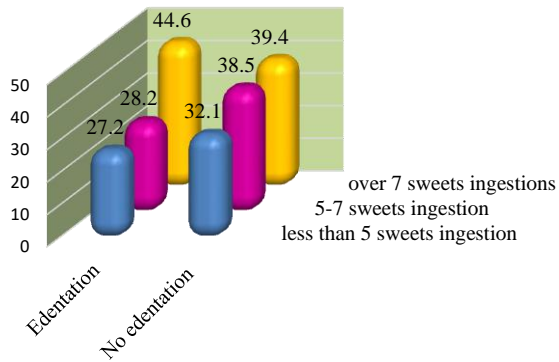


Figure 5. Correlation between edentation

Figure 6 . Correlation between edentation and the teeth brushing frequency and the frequency of daily sweets intake

In our study the tooth loss (presence of edentation) is mainly associated to the group of students which do not brush their teeth or brush their teeth once a day (Fig.5).



Another significant correlation was established between the presence of the edentations and the frequency of sweets intake. The high prevalence of tooth loss was

significantly associated with a high

carbohydrates intake frequency (Fig.6).

DISCUSSIONS

Even the prevalence of edentations have decreased in many developed countries partial edentation still has a significant effect on the quality of life in adult population. [9] The prevalence of partial edentation is influenced by the level of education, gender or income, tooth loss being associated with aesthetical, functional, psychological and social impact of the individuals. [10,11,12]

The present study reported a prevalence of edentations which is in accordance with the level reported for Europe but bigger than the value reported for US of 33%. Statistical analysis of the data demonstrates that the majority of edentations involved one single tooth.

Several studies on the causes of the teeth loss were developed in different population groups demonstrating a higher incidence of edentation in males comparing to females while other authors reported that the prevalence of the edentation had nothing to do with the gender of the subjects. [13,14,15] Epidemiological data on oral health care concerns are essential for the future orientation and planning of oral healthcare systems. [16,17,18]

Location of edentation is important because different groups of population have different perceptions of the consequences and need to replace the missing teeth. [19,20,21] The results of the study showed that the frequency of the edentations in the maxillary arch was higher than in the mandibular arch among the study subjects.

The causes of the edentations were the dental caries, the periodontal disease and the orthodontic treatments confirming the results

reported by other authors as Bruce [22,23] who also found that the main reason for tooth loss was the dental caries (83%) followed by periodontal disease (17%). In our days one of the most often invoked reason for avoiding dental treatment is the perceived risk for infection transmission which is demonstrated to be related to the use of protective equipment by the dentist. [24,25,26]

The causes and significance of tooth loss vary widely among individuals and may be replaced by a variety of means for functional, social and psychological reasons, rather than for significant physical health benefits. Therefore, it is essential to determine what the loss of teeth means to patients and what their expectations are for the outcomes following tooth replacement by various methods. [27,28]

The multidimensional relationship between behavioral risk factors, socio-economic status and tooth decay as a major cause of tooth extraction is well established. Economically disadvantaged families have less access to dental care and to the use of other health care services. The socio-economic status is inversely associated with the presence of edentations, the subjects in medium and low levels showing a higher risks of becoming edentulous. The high concern about the consequences and management of edentation is mainly also, associated to high socio-economical level confirming the results reported in other studies in the literature. The lack of awareness and the financial constraints proved to be the main reasons for neglecting the edentation, the patients belonging to the higher income levels addressing the private dental offices.

The results of the present study highlights, if necessary, the importance of the preventive approach to oral diseases in younger ages regarding the oral hygiene and diet control. The high prevalence of edentation is demonstrated to be related to oral hygiene habits, frequency of teeth brushing, respectively. At the same time the presence of edentations is related to a high frequency of sweets ingestions demonstrating the role of the nutritional counselling in the prevention of the dental caries. [18,29]

In relation to the preventive approach the

dental sealing using as a primary prevention method in early childhood demonstrated a high efficiency in decreasing the incidence of dental caries and its complications which represent a major cause of tooth loss in adolescence. [19]

Moreover, studies on the evaluation of the interventional protocols regarding the chosen techniques and materials demonstrate the importance of the proper management of dental caries in adolescents based on last technological acquisitions and caries risk assessment. [20, 21]

CONCLUSIONS

1. The teeth loss caused by odonto-periodontal diseases represents a major indicator on oral health status, on the efficiency of early preventive interventions and on oral health care accessibility.
2. Consequences of the edentation in young adults are not yet perceived as a real health problem mainly as a result of lack of knowledge and education for oral health.
3. The young adults age group is still a vulnerable one regarding the influence of external environmental and social factors imposing an individual decision for each clinical case.
4. A complete oro-dental diagnosis, the evaluation of the socio-economic, medical, behavioural risk factors must guide the therapeutically approach regarding edentations in young adults.

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