Original Article

Prevalence of Complete Edentulism and Associated Factors in Ardabil City, 2013

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ABSTRACT

Background: High statistic of edentulism in Iran shows that condition of hygiene in society is not good. It shows that the people do not have enough information about oral hygiene measurements.

Aim: This study was aimed to assess prevalence of complete edentulism and associated factors in patients referred to clinics in Ardabil city.

Methods: This was a cross- sectional study that has been done on 440 patients referred to clinics in Ardabil city. Information was collected through questionnaire and collected data analyzed by statistical methods in SPSS.16 software.

Results: Out of 440 patients, 241 were men and other 99 were women. 76 people (17.3%) were completely edentulous. Most important cause of tooth loss with (65.8%) was tooth decay. Percentage of patients referred to dental laboratories for making denture was 64.5%.

Conclusion: Results showed that there was a significant relationship between age, education, smoking, week hygiene of oral, dental care and periodontal diseases, economic, Diabetes and heart disease with edentulism.

Keywords: Edentulism, Oral hygiene, Denture

INTRODUCTION

Edentulism is the final result of dental caries and periodontal disease. Losing teeth exerts undesirable effects on patients in terms of both function and aesthetics [1]. Edentulism is a kind of impairment, and losing a number of teeth gradually, the patient approaches this complication. Research about reasons for edentulism in persons with complete edentulism truly paves the way for the prevention of tooth loss as well as identification of its causes. According to existing literature, important factors in missing teeth are: aging above 35, maleness, lack of dental care and treatment, not brushing, cigarette smoking, diabetes, high blood pressure, rheumatoid arthritis, and periodontal disease of anterior teeth relative to posterior teeth [2]. The determinants of losing teeth are old age, menstruation (pregnancy or menopause), and living alonein females, and old age, and cigarette smoking in males [3]. According to studies undertaken, there is a direct relationship between cigarette smoking and losing teeth [4]. Edentulism can function as an indicator in determining the hygienic status of people in the society, such that the wide spread of edentulism can be attributed to the low culture. Taking into account scientific advances and increased human longevity as a component of public health [4], individuals are more prone to edentulism due to their inclination toward soft foods [5]. Poor hygienic status, spread of tooth caries, and edentulism are not exclusive to adult Iranian community. Children also suffer from a similar condition. The reverse relationship between income level and oral health reveals that lower social classes spend less money on oral and dental health services. They may also visit dental technicians and charity clinics which charge less. In some countries advanced treatments, such as implant, are used, but in our country due to economic problems, cultural and hygienic issues, much emphasis is still put on common treatments and classic prostheses including fixed and movable ones [6]. Increasing public awareness of the necessity of prevention and on-time treatment of dental problems will not only reduce

dental costs, but also decline the life of teeth.Since the youth form a large portion of the population of Iran, we can remain hopeful about future health of our society through training healthcare. The present study which aims at investigating the prevalence of edentulism and the factors associated with it in Ardabil city can be constructive in improving health and prevention programs in this small population.

MATERIALS AND METHODS

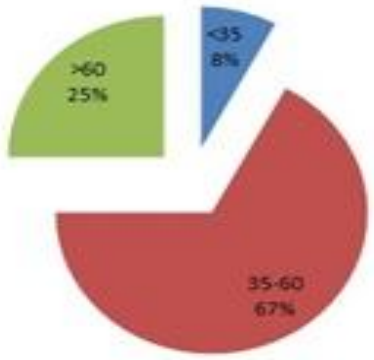
This study is a descriptive cross-sectional study performed over the patients (440) visiting clinics, doctors' offices, and laboratories all over the Ardabil city. Data were gathered through administering questionnaires and then analyzed by SPSS.16 software. Descriptive and analytical statistics were used and finally, the results, gained through statistical criteria and tests, were shown in figures.

RESULTS

From total 440 participants, 54.8% were males and the rest of them were female. In terms of occupation, 38.6% were self-employed; 19.3 % were employees; and the rest were housewives. 79.1% had B.S., B.A. or higher degrees. 82.3% were married, and the number of married cases was 4.6 times more than single people. The youngest patient was 16, and the oldest one was 92 years old, thus the average age was 38.87% with Standard Deviation (SD) of 0.6. In patients with complete edentulism the average age was 54.9 with SD of 5.1 which is higher than that of healthy group with an average of 35.4 and SD of 0.6. Furthermore, the highest number of persons (51 cases) who suffered from complete edentulism belonged to the age range between 35 and 60 (see Figure 1). Of subjects, 23% had a high economic status, 71.6% had average, and the remainder had low economic status. Regarding history of smoking or any specific disease in the cases under study, 63 persons (14.3%) had cigarette smoking history; 5.9% had history of diabetes; 7.7% had history of heart disease; and 11.4% had history of kidney and lung disease. The frequency of edentulism among all cases was 76 persons (17.3%).

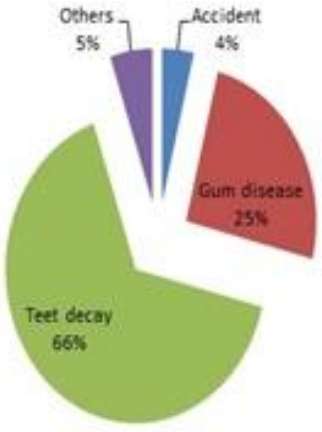
The most common cause of tooth loss among all patients afflicted with complete edentulism that is for 50 persons (65.8%), was teeth decay (see Figure 2). Out of all cases116 ones (26.4%) had Xerostomia. Of the patients with complete edentulism,54 cases (71.1%) were highly satisfied with their complete dentures, and the rest were not. In respect of oral health, 25.2% were at agood level; 65.2 were at an average level; and 9.5% were at a poor level. Of completely edentulous cases, 54% had visited clinics to constructiona new denture (Figure 3). According to the results, 22 persons (5%) were using special drugs, and 65% had healthcare insurance. In addition, 35.5% of patients with complete edentulism visited specialist dentists to order new dentures, while 64.5% of them visited dental technicians.

Figure 1: Distribution prevalence of complete edentulism by age groups



The appearance of dentures was unhealthy in 63.2% of the cases and healthy in the remainder (Figure 4). 17% of patients were fat; 61.8% were normal; and 21% were thin. Investigation into the relationship between complete edentulism and gender suggested no significant relationship between males and females with regard to complete denture reception. However, a significant relationship was found between level of education and prevalence of complete edentulism. It can, thus, be said that in each educational level prevalence of edentulism can be very different from that in other levels.

Figure 2: Reasons for losing teeth in the individuals with complete edentulism



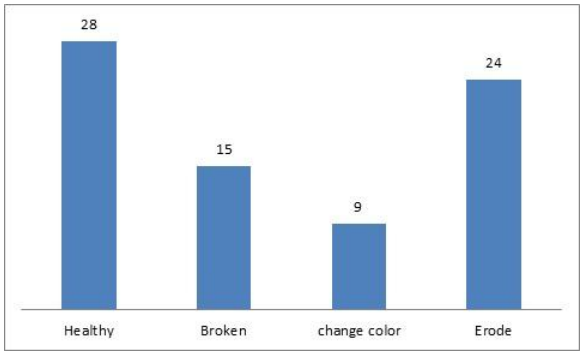
Of statistical significance was also the relationship between prevalence of edentulism on the one hand and marital status on the other, such that the prevalence of edentulism was 97.4% in married and 2.6% in single patients. There was a significant relationship between edentulism and economic status, as well.And most people suffering from edentulism(73.3%) were from mid economic class. There was significant relationship between prevalence of complete edentulism and cigarette smoking, such that 36.8% of edentate persons (persons with complete edentulism) were smokers. The ratio of these persons to dentate ones was rather higher (9.6%). The results revealed significant relationship between edentulism and hygienic status of persons, it means that most persons with complete denture had poor and average hygienic status. The relationship between complete edentulism and history of disease was also statistically significant and edentulism was much more common in patients with a history of diabetes and heart disease than in others. However, the relationship between prevalence of complete edentulism and body conditions, having healthcare insurance, as well as drug use was not statistically significant.

Figure 3: Reasons for the edentulous patients' visiting clinics

DISCUSSION

Scientific advances have helped increase human longevity and, thus, induced the need for specific hygienic and treatment services for long-living individuals. The number of elderly people with complete edentulism can be decreased through planned prevention in the area of oral health. Examining the factors affecting edentulism and becoming aware of dominant factors in the region can be very influential in such planning [4]. In this descriptive cross-sectional research, subjects (440) were selected from several different regions of the city. Overall, 241 males and 199 females participated in the study, among which 76 persons were completely edentulous. Ofall cases with complete edentulism, 49 were males and 27 were females. Bankdar-chyan (2010-2011), in a study on prevalence of complete edentulism in Yasouj city, failed to find any relationship between complete edentulism and gender [1].

Figure 4: Appearance of dentures in edentulous persons



By studying 76 completely edentulous patients, it was concluded that the factors affecting edentualism were caries in 50 cases (65.8%), Gum disease in 25%, and accidents in 3%, and other factors in the rest. Indubitably, this manifests caries as the most common cause of tooth loss in the present study. According to the results of this research, 35.5% of completely edentulous patients visited specialist dentists to order new complete dentures while 64.5% visited dental technicians, and among them 54 persons (71.1%) were completely satisfied with their complete denture and the remainder was not satisfied. This indicates the unfortunate fact that the work of specialist dentists is somehow done by dental technicians, and this is the reason why patient satisfaction has dramatically decreased (by 30%). The reasons for such a choice might also be lack of awareness and low culture on the part of patients, and low costs offered by dental technicians compared to specialist dentists. Only 41 (54%) out of 76 patients intended to order new complete dentures, and the remaining 35 cases wanted to get their complete denture fixed or exchanged. This is indicative of dissatisfaction with the new complete dentures and of poorly-made complete dentures. The study also revealed that there was a significant relationship between level of education and prevalence of

edentulism. It can be mentioned that in each level of education the prevalence of edentulism can vary from that in other levels. The study also showed a significant relationship between complete edentulism and economic status of patients. And most persons with complete edentulism (37.7%) were from an average economic class (p=.001).Economic condition as one of reasons can account for patients 'visiting dental technicians to get new complete dentures, since such dentists demand less costs for their services [9]. Of persons with complete edentulism36.8% were smokers. This percentage is higher compared to the percentage of persons without complete denture (9.6%) and, according to this research, can be considered one of the most important factors contributing to tooth loss [3,4,8]. As expected, a significant relationship was found between hygienic conditions of persons and prevalence of complete edentulism. Put differently, most persons with complete denture were at a bad or average hygienic status. This is in line with the findings of similar studies including Hitti [2] and David [9].

Of statistical significance was also the relationship between complete edentulism and disease history, such that edentulism is more prevalent among persons with a history of diabetes and heart disease than others. Diabetes is one of major systemic diseases which affects tissues of periodontal and results in tooth loss [2]. Due to the effect of diabetes on all body systems, especially the immune system, body defense mechanism cannot function well, and this affects gums. As a result, it may damage protective dental tissues and, consequently, lead to tooth loss. In this research, the average age of persons with complete edentulism was 54.9 years, which is in sharp contrast with WHO's predictions whose goal is to preserve at least 20 teeth up to the age of 80 (10).Of 440 persons recruited, 116 (26.4%) marked the Xerostomia option. Results suggested that only 22 (5%) out of all cases were using specific drugs, which represents no association with complete edentulism. 65% of all cases had healthcare insurance, but the remainder did not. This shows that approximately two third of visiting patients used healthcare insurance. Results showed that there exists a statistically significant relationship between the prevalence of edentulism on the one hand and marital status on the other, such that the prevalence of complete edentulism is 97.7% in married persons and 2.6 % in single ones. This further highlights the point that edentulism rate is higher in old people than in young people, and that as one grows older, edentulism increases as well [2, 3, 11, and 12].

Age distribution of edentulous persons in this study is as follows: Of those below 35 years of age, 6 persons (7.9%); of those aged 35-60, 51 persons (67.1%); and of those above 60, 19 persons (25%) suffered from edentulism.

CONCLUSION

The present study showed that complete edentulism is rather widespread in the targeted community (17.2%). There is significant statistical relationship between edentulism prevalence and variables such as age, level of education, cigarette smoking, poor oral health, caries, periodontal disease, economic status, and history of systemic disease including diabetes and heart disease.

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