EDENTULISM IN RELATION TO SOCIODEMOGRAPHIC STATUS OF PATIENTS

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ABSTRACT

The aim of the study was to assess the edentulism in relation to age, gender, location, level of income and education level of patient. Descriptive cross-sectional study was carried out at Prosthodontics Department, Liaquat University Hospital, Hyderabad from October 2017 to September 2018. Diagnosis were made by proper history and examinations. Data were entered regarding patient's age, gender and level of education, level of income and residence where patient live in proforma. Out of 218 patients, 61.9% were males and 38% females. Minimum age was 50 years while average mean was 59.59 years with standard deviation 9.68 year. 60% of patients were from rural and 40% were from urban areas, 49.5% patients had primary to intermediate education, 40.8% were uneducated, while only 9.6% were graduate patients. About 72% of patients were having income below half million Pakistani Rupees per year, 26.1% earned half to one million and only 1.8% had income more than one million per year. It was concluded that a significant relationship existed between age, educational level and socioeconomic status which played vital roles in edentulism. Motivation and ongoing dental education are important for the elderly patients to eliminate the delusion that "tooth loss" is an unavoidable part of the aging process and to identify the availability of prosthetic facilities which helps in reduction of edentuliusm.

Key Words: *Edentulism, socio-demographic status, edentate patient*

INTRODUCTION

One of the major dental clinical problem is loss of tooth.[1] Edentulism is defined as "condition in which all permanent teeth are lost".[2] Conceptually edentulism is distinct from occurrence of common incremental loss of dentition throughout adult life.[3] Persons health and well-being of life reflects in person`s mouth. Edentulism is also important in sense, as it is an indicator of functioning of public health care system and competence of a particular area. It can also indicate the hygiene status of people in the society.[3]

According to data banks of World Health Organization, incidence of complete edentulism has been estimated between 7% and 69% internationally.[2] Edentulism is a major disease which remains world-wide especially in older adults[4]. Prevalence of edentulism is 16.3% in France, 58% in Canada, 21.7% in Mexico, 9% in China, 3% in Ghana[4] while Kaira LS et all[2] mentioned in their study that about 48.6% and 51.4% of edentulism is present in rural and urban areas. It is estimated that the number of older people increasing more rapidly than other age groups. It is estimated that edentulism increasing at the end of century Globally.[5]

Edentulism is end point of some multi-factorial processes such as periodontal problems, caries, pulpal pathology, failed endodontic treatment and infections.[6] Oral diseases and general health having impacts on each other.[6] There are several factors associated with edentulism like old age, health security, asthma, diabetes, arthritis, hypertension, smoking, quality of life, level of education, lower wealth and rural inhabitants[7]. Despite a continuous decline of complete tooth loss over the past several decades, more than one-third of peoples aged ≥ 65 years old are edentulous.[8] Edentulous peoples are expected to decrease in coming days as a result of improved oral health.[8] Previous studies have shown many factors such as attitude, behavior, dental attendance, characteristics of health care system and socio-demographic factors play important role in the etio-pathogenesis of edentulism.[9] Internationally; many studies shows relationship of tooth loss and gender but some contradict to each other like Peltzer K,[4] shows

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more tooth loss in females while Baqar A[1], Kaira LS[2] and Akinboboye BO[5] shows more tendency in males. On other hand several studies have also reported significant age and gender difference with more males becoming edentulous every year than females.[10-]

Therefore, the aim of this study was to generate data of edentulism in different ages, gender, their educational level, income level and location/placewhere patient live as this type of study has not be done locally. After knowing this data government, NGOs and other community helping health agencies will be able to control the occurrence of edentulism by conducting the different educational and awareness programs.

METHODOLOGY

Descriptive cross-sectional study was carried out at department of Prosthodontics, Liaquat University Hospital, Hyderabad from October 2017 to September 2018. Sample size calculation was done by using Raosoft software, by using the population[1] ē 95% confidence value and 5% margin of error. Sample size stands to be n=218. Non- probability consecutive sampling technique was adapted. Completely edentulous male and female patients of any age were included. Patients having any impacted tooth, with any embedded or broken-down root, mentally retarded patients and patients outside from Hyderabad city were excluded. After the approval of research proposal by ethical committee of LUMHS, socio-demographical data was collected. Prior to the study, selected patients were informed regarding the nature and purpose of this study and informed consent obtained from patients. Diagnosis of all cases of edentulism was made by taking proper history, clinical and radiographic examination. Data was entered regarding patients age, gender, level of education, level of income and place where patient live in proforma. Data entered and analyzed using SPSS version 21.0. Mean along with standard deviation was calculated for age. Frequency and percentages were calculated for gender, level of education, level of income and place/location where patient lives.

RESULTS

In this study data from 218 cases were collected; their mean age was 59.59+9.68 years with minimum age 50 years and maximum 80 years. Males were found in majority 62%, while female was 38%. According to the residential status majority of the cases 60% were from rural areas, while 40% were from urban areas. Details are given in Table 1.

Majority of cases 49.5% were noted with primary to intermediate educational level, 40.8% were uneducated, while only 9.6% were graduate. As shown in Table 2.

According to the income level of the cases, most-

TABLE 1: PATIENTS DISTRIBUTION ACCORDING TO AGE AND GENDER AND RESIDENTIAL STATUS N=218

Age		
	Mean Age	59.59 years
	Std. Deviation	9.68 years
	Minimum Age	50.0 years
	Maximum Age	80.0 years
Gender		
	Male	135 (61.90%)
	Female	83 (38.10%)
Residential status		
	Rural	87 (39.90%)
	Urban	131 (60.10%)

TABLE 2: CASES DISTRIBUTION ACCORDING TO EDUCATIONAL STATUS N=218

Educational level	Frequency	Percent
Graduate	21	9.6%
Primary to intermediate	108	49.5%
Uneducated	89	40.8%
Total	218	100.0%

TABLE 3: PATIENTS DISTRIBUTION ACCORDING TO INCOME LEVEL N=218

Income level	Frequency	Percent
More than one million Pakistani Rupees per year	04	1.8%
Half to one million Pakistani Rupees per year	57	26.1%
Below half million Pakistani Rupees per year	157	72.0%
Total	218	100.0%

ly patients 72.0% were presented with income level below half million Pakistani Rupees per year, 26.1% were presented with income level between half to one million per year and only 1.8% cases were presented with income of more than one million Pakistani Rupees per year. Table 3.

DISCUSSION

Tooth loss is the dental alike a death. It reflects the attitude of patient towards dental care. One of the major problem in elderly population is tooth loss, affecting the mastication and dietary intake leading to malnutrition. Numerous studies have been carried out worldwide to investigate the effects of socio-demographic factors and lifestyle on the prevalence of tooth

loss.[12] However, exploding population and inadequate resources, in a developing country like Pakistan, have limited the feasibility of such studies. In this study total 218 cases were studied, their mean age was 59.59+9.68 years. Similar results are seen in the study conducted by Nagaraj E et al[13], whose results showed that 71% males while 29% females with an age range of 40–70 years found edentulous. Significantly more males demanded complete dentures as compared to females.

In the present study, according to the gender distribution male were found in majority 62%, while females were 38%. Similar results are reported by Hoover JN et al[14] and Suominen T et al[15] that significant gender difference is seen in the edentulism, with more males becoming edentulous than females. Significant association between gender and edentulism was also seen in study conducted by Medina Slis CE et al[16] and Downer MC et al[17]. whose results showed that majority of the study population comprised partially edentulous female patients (52.1%).

In this study according to the residential status majority of the cases 60% were from rural areas, while 40% were from urban areas. The difference in tooth loss between rural and urban population may be due to the meeting dental care needs is more challenging to the people living in the rural areas as compare to peoples living in urban areas. Accessibility and affordability of dental care services and low education might be the potential obstacles for the rural peoples to pursue dental treatment. In India there is gross difference in oral health care provision between urban and rural areas.[13] Inadequate dental activity due to decreased educational background and negative attitudes towards dental services impact on edentulism.

In our study, majority of edentulous patients 49.5% were noted with primary to intermediate educational level, 40.8% were uneducated, while only 9.6% graduated. Similar results are seen in the study directed by Makhviladze G et al[18].

The socio-behavioral risk factors have an important role in the progress of edentulism from young ages, and will influence the importance given to oral health.[19-20] Socio-economic and education are the most important elements that influence the prevalence of edentulism . Millarand WJ et al[19] and Bedos C et al[20] also shown in their results that low socio-economic level is followed by higher prevalence of dental caries and edentulism. Low level of education has more number of missing teeth compared to the other groups, due to the lack of awareness and financial constraints being the main reason for their neglect and patients belonging to the higher income levels approached private oral health clinicians[19-20]. In this study, according to the income level of the cases, mostly cases 72.0% were presented

with below half million Pakistani rupees per year, 26.1% were presented with income level between half to one million per year and only 1.8% cases were presented with income of more than One Million Pakistani Rupees per year. Results of the study conducted by Vadavadagi SV et al[12] found that majority of the study patients were belonging to the upper middle class in partially edentulous state, 15.8% of dentulous were in lower middle class, and 14.1% of edentulous were in upper middle class. There is a definitive need for a step-by-step approach in eradicating the cause all over the country with special focus on people who suffer from socio-economic and geographical disadvantage.

CONCLUSION

A significant relationship exists between age, educational level, socioeconomic status and complete edentulism. Motivation and ongoing dental education are important tools in the elderly patients to eliminate the delusion that "tooth loss" is an unavoidable part of the aging process.

Hence strategies should be developed to improve educational and the socioeconomic status of our elder population. This study provides further evidence supporting the idea that poor oral health as proven by complete edentulism is an important public health issue across the life span.

These type of studies should be carried out in other parts of country to observe the severity of problem and relationship of edentulism with other factors. Duration and sequence of tooth loss and causes of tooth loss should also be included in these types of studies so we know the pattern of tooth loss and bone resorption and approximate age of patient when he/she become edentate to prevent edentulism.

REFRENCES

1 Baqar A, Mirza D, Ahmed S, Hakeem S. Pattern of missing teeth in patients seen in prosthodontic department in a teaching hospital of Karachi. Pak Oral Dent J 2014; 34: 366-369.

2 Kaira LS, Jain R, Kukreja H, Dabral E, Dayakara HR, Asopa V. To study the prevelance of complete edentulousness among rural and urban population of Udaipur district of Rajasthan in relation to age and gender. Eur J Prosthodont 2013; 1: 21-6.

3 Thomson WM. Monitoring Edentulism In Older New Zealand Adults Over Two Decades: A Review And Commentary. Int J Dent. 2012; 12: 1-4.

4 Peltzer K, Hewlett S, Yawson AE, Moynihan P, Preet R, Wu F6, Guo G, Arokiasamy P, Snodgrass JJ, Chatterji S, Engelstad ME, Kowal P. "Prevalence of loss of all teeth (Edentulism) and associated factors in older adults in China, Ghana, India, Mexico, Russia and South Africa". Int J of Environ Res and Public Health. 2014; 11: 11308-24.

5 Akinboboye B O, Shaba O P, Akeredolu P A, Oderian O H. Socio-demographic determinants of usage of complete dentures in a Nigerian teaching hospital: A pilot study. Eur J prosthodont. 2013;1 :37-41.

6   Dosumu O O, Ogunrinde J T, Bamigboye S A. Knowledge of consequences of missing teeth in patint attending prosthetic clinic in U.C.H. ibadian. Ann IbdPg Med 2014;12 :42-48.

7   Esan TA, Olusile AO, Akeredolu PA, Esan AO. Socio-demographic factors and edentulism: the Nigerian experience. BMC Oral health. 2004; 4 :3.

8   Kalk W, Van Rossum GMJM, Van Waas MAJ. Edentulism and preventive goals in the treatment of mutilate dentition. Int Dent J. 1990; 40:267–74.

9   Nagaraj E, Mankani N, Madalli P, Astekar D. Socioeconomic factors and complete edentulism in north Karnataka population. J Indian Prosthodont Soc. 2014;14 :24-8.

10 Slade GD, Locker D, Leake JL, Wu AS, Dunkley G. The oral health status and treatment needs of adults aged 65+ living independently in Ottawa-Carleton. Can J Public Health. 1990; 81: 114–19.

11 Jeyapalan V, Krishnan CS. Partial edentulism and its correlation to age, gender, socio-economic status and incidence of various Kennedy's classes–a literature review. J Clin Diagn Res. 2015; 9(6): ZE14–ZE17.

12 Vadavadagi SV, Srinivasa H, Goutham GB, Hajira N, Lahari M, Reddy GT. Partial edentulism and its association with socio-demographic variables among subjects attending dental teaching institutions, India. J Int Oral Health. 2015; 7(Suppl 2): 60–63.

13 Nagaraj E, Mankani N, Madalli P, Astekar D. Socioeconomic factors and complete edentulism in north Karnataka population. J Indian Prosthodont Soc. 2014; 14(1): 24–28.

14 Hoover JN, McDermott RE (1989) Edentulousness in patients attending a university dental clinic. J Can Dent Assoc. 55 :139–140.

15 Suominen-Taipale AL, Alanen P, Helenius H, Nordblad A, Uutla A. Edentulism among finish adults of working age. Community Dent Oral Epidemiol. 1999;27 :353–65.

16 Medina-Solís CE, Pérez-Núñez R, Maupomé G, Casanova-Rosado JF. Edentulism among Mexican adults aged 35 years and older and associated factors. Am J Public Health. 2006;96 :1578-81.

17 Downer MC. The improving dental health of United Kingdom adults and prospects for the future. Br Dent J. 1991; 170: 154-8.

18 Makhviladze G, Tsitaishvili L, Margvelashvili V, Kalandadze M. Evaluation of edentulism, influence of socio-economic, behavioural factors and general health on prosthetic status of adult population of Georgia. European Scientific Journal, ESJ. 2015; 2: 233-43.

19 Millarand WJ, Locker D. Edentulism and denture use. Health Rep. 2005;17 :55-8.

20 Bedos C, Brodeur JM, Boucheron L, Richard L, Benigeri M, Olivier M, Haddad S. The dental care pathway of welfare recipients in Quebec. Soc Sci Med. 2003; 57: 2089-99.

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