

Prevalence Of Partial Edentulism, Complete Edentulism And Single Complete Opposing Partial Edentulism In Relation To The Age Groups And Gender In The Local Population Of Hyderabad

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ABSTRACT:

Objective: This study was carried out to evaluate the prevalence of partial edentulism, complete edentulism and complete edentulous arch opposing the partial edentulous arches in relation to the various age groups and gender in local population of Hyderabad.

Materials and Methods: A cross-sectional study was conducted at the Department of Prosthodontic, Isra Dental College, Hyderabad. Duration of the study was 6 months, from January 2016 to June, 2016. A total 504 patients were selected for this study on the basis of history and clinical examination. The selected subjects were divided into six age groups. Data was statistically analysed by SPSS statistics software version 21. Descriptive statistics such as frequencies, percentages, mean and cross tabulation were applied to test the variables. The level of statistical significance was set to 0.5%.

Results: The results showed that out of 504 selected subjects 426 (84.5%) subjects were partially edentulous, as compared to completely edentulous patients who numbered only 66 (13.1%) whereas 7 (1.4%) subjects had complete edentulous upper ridge and partially edentulous lower ridge, only 5 (1%) subjects had complete edentulous lower ridge and partially edentulous upper ridge. Partially edentulous jaws were more prevalent in females and in middle aged patients ranging from 31-40 years and completely edentulous jaws were more prevalent among male subjects in old age subjects who were above 60 years of age. Single complete denture opposing partially edentulous ridges were more common in females and in patients who were above 30 years of age.

Conclusion: This study concluded that the partially edentulous jaws were more prevalent as compared to completely edentulous jaws. Partially edentulous jaws were more prevalent in females and in middle aged patients while completely edentulous jaws were more prevalent among male subjects and in old age subjects of either age, whereas single complete denture opposing partially edentulous ridges were more common in females and in patients who were above 30 years of age.

Key words: Partial edentulism, complete edentulism, prevalence, age, gender.

INTRODUCTION:

Dentition is a blessing and an asset to human's face. Without teeth, humans are considered to be a handicapped. An individual feels handicapped in terms of esthetics and oral functions like speech and mastication.

Inadequate dentition can cause difficulties in food intake;

it may affect mastication and masticatory abilities which play important role in digestive system and general health of an individual. Completely edentulous patients are found to be at a higher risk of malnutrition due to weak and limited chewing ability.

Edentulism may affect confidence level of an individual in society¹. Less number of remaining natural teeth not only diminishes the quality of life but general health and oral functions as well^{2,3}. Teeth either natural or artificial are very essential for human health to provide satisfactory function^{4,5,6}. Therefore, patients need replacement of their lost teeth as soon as possible.

Edentulism is associated with low education level and poor family income^{7,8}. Other multiple factors include: dental caries, periodontal diseases, trauma, poor oral hygiene, poor nutrition, tobacco smoking, alcohol intake, degenerative systemic diseases, unfavourable medication and abnormal oro-dento-facial anatomy. The lower socio economic condition, socio demographic situation, cultural misbeliefs and unfavourable environment may further aggravate the factors for tooth loss⁹⁻¹⁶. Many patients may prefer extractions over conservative treatments influenced

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by their lower socio-economic and demographics factors.

The prevalence and distribution of complete edentulism might be related with a multifarious interrelationship between individual, traditional, health and socioeconomic influences in the developed and less developed countries¹⁷.

World Health Organization record specifies that in majority of countries worldwide, dental carries is more prevalent with some nations recording 100% incidence in their populations¹⁰. According to World Health Organization, an adult should have minimum of 21 functional teeth to provide the ability to experience a good dietary intake without any prosthesis¹⁸ but edentulism considerably reduces the quality of life¹⁹.

Several cross sectional studies on the prevalence of edentulism show consistently that edentulism has direct associated with age, gender and living areas in most countries²⁰.

Edentulism rates among the elderly people of European countries have been reported as relatively high such as England (74-79%), Scotland (85%), Ireland (72%), Northern Ireland (69%), Netherlands (83%), Denmark (68%), Finland (67%) and Norway (57%). In Australia, 68% of people aged 65 or more were edentulous. Edentulism is consistently increased with the age, females having higher rated of edentulism as males²¹.

This study was carried out to evaluate the prevalence of the partial edentulism, complete edentulism and single complete opposing the partial edentulism in relation to the age groups and gender in the local population of Hyderabad.

MATERIALS AND METHODS:

An epidemiological cross-sectional study was conducted in the Dept. of Prosthodontic at Isra Dental College Hyderabad, over duration of 6 months, from January, 2016 to June, 2016. To determine the frequency of partial edentulous, complete edentulous and single complete opposing partially edentulous ridges among the patients visiting in the Dept. of Prosthodontics at Isra Dental College welfare OPD.

Total 504 patients of both genders were selected for this study on the basis of history and clinical examination.

The selected subjects were within the age range from 10 years to 80 years. They were divided into 6 age groups: Group 1: 10-20 years, Group 2: 21-30 years, Group 3: 31-40 years, Group 4: 41-50 years, Group 5: 51-60 years, Group 6: 60+ years.

The data was analysed by SPSS statistics software version 21. Descriptive statics such as frequencies, percentages, mean and cross tabs etc. were applied to test the variables. The level of statistical significance was set to 0.5%.

RESULTS:

Our study included 504 patients, of which 249 (49.4%) were males and 255 (50.6%) were females (Fig: 1). Subjects chosen ranged in age from 13- 80 years with mean age of 44.93 years. Subjects were divided into 6 age groups according to their age. 3.2 % subjects belonged to group 1, 17.9 % subjects belonged to group 2, 23.4 % individuals belonged to group 3, while group 4, 5 and 6 constituted 25.2%, 17.1 % and 13.3 % subjects respectively.

Out of 504 selected subjects 426 (84.5%) subjects were partially edentulous, as compared to completely edentulous patients who numbered only 66 (13.1%) whereas 7 (1.4%) subjects had complete edentulous upper ridge and partially edentulous lower ridge while only 5 (1%) subjects had complete edentulous lower ridge and partially edentulous upper ridge (Fig:1).

Out of the 426 partially edentulous subjects, 199 (46.7%) were males and 227 (53.3%) were females.

Majority of the partially edentulous patients 109 (25.6%) and 105 (24.6%) were from age group 3 and 4 respectively, while only 16 (3.8%), 87 (20.4%), 67 (15.7%) and 42 (9.9%) subjects belonged to age group 1, 2, 5 and 6 respectively (Fig:2).

Thus, indicating that partially edentulous jaws were more prevalent in females and in middle age pt. ranging from 31-40 years.

From 66 completely edentulous patients, 46 (69.7%) subjects were males and 20 (30.3%) were females. Majority of the completely edentulous patients 24, 17 and 15 subjects were from age group 6, 4 and 5 respectively. While only 0, 3 and 7 subjects were from age group 1, 2 and 3 respectively.

Hence, the result of this study demonstrates that completely edentulous jaws are more prevalent among male subjects and in old age pt. that are above 60 years of age.

Of the 7 subjects who had complete edentulous upper ridge and partially edentulous lower ridge, 3 were males and 4 were females (Table:1). Majority (4 subjects) belonged to age group 4, while 2 and 1 subject were from group 5 and 6 respectively.

Thus, the result of this study demonstrates that completely edentulous upper ridge and partially edentulous lower ridges are more prevalent among female subjects and in patients who range from 41 to 50 years of age.

Out of 5 subjects who had complete edentulous lower ridge and partially edentulous upper ridge, 1 was male while 4 were females and 2 subjects belonged from each group 3 and 5 while only 1 subject belonged to group 4.

DISCUSSION:

This study evaluated the frequency of the partial edentu-

Gender	Partially Edentulous	Completely Edentulous	Upper Partial and Lower Complete Edentulous	Upper Complete and Lower Partial Edentulous	Total
Male	199 46.7%	46 69.7%	01 20.0%	03 42.9%	249 49.4%
Female	227 53.3%	20 30.3%	04 80.0%	04 57.1%	255 50.6%
Total	426	66	05	07	504

Table 1: Distribution of the Edentulism according to the Gender

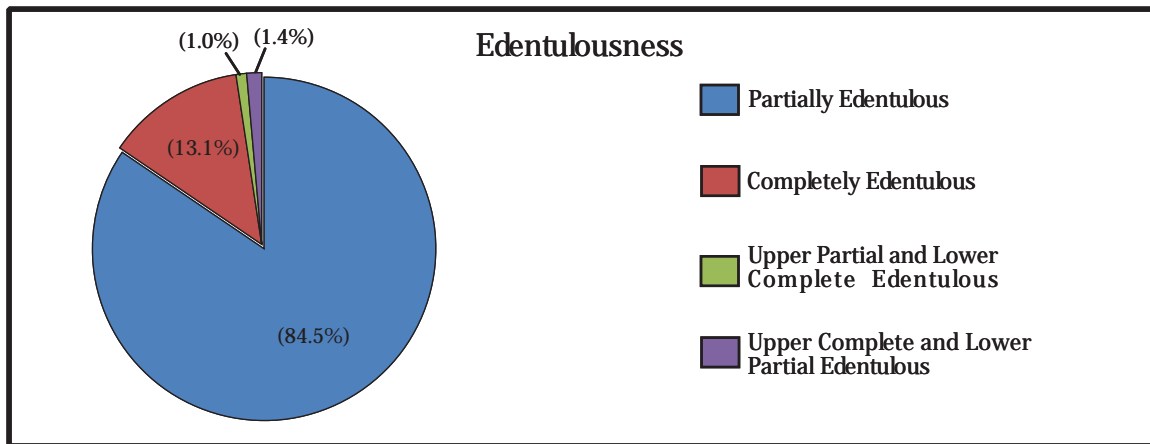


Figure: 1 Prevalence of Edentulism

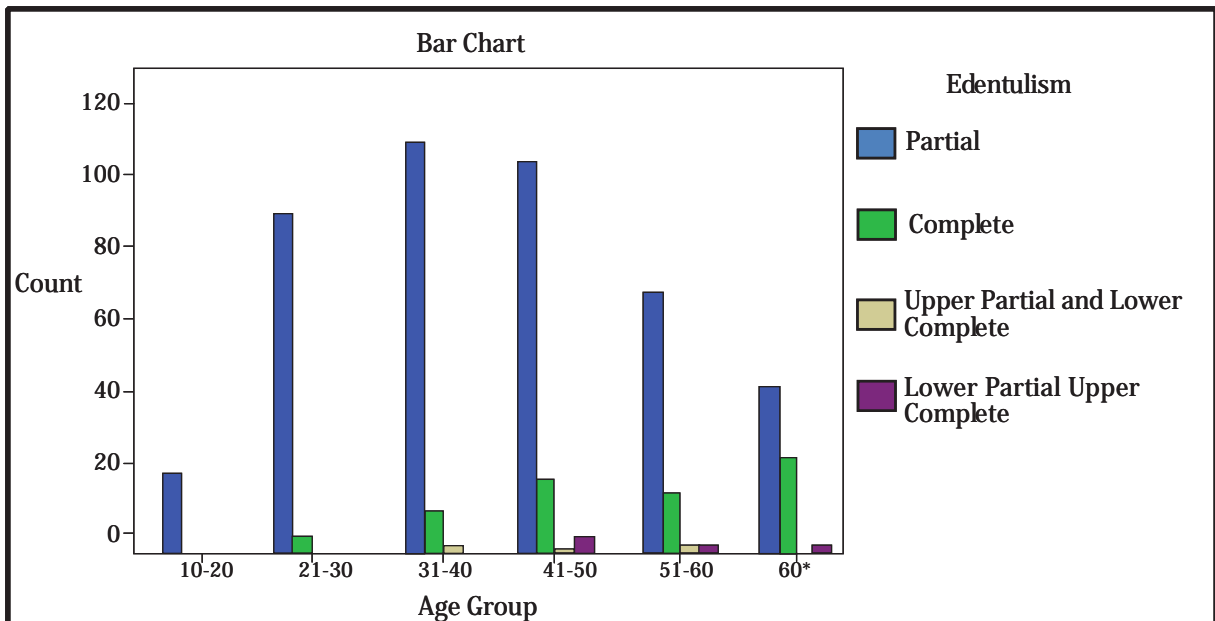


Figure: 1 Prevalence of Edentulism and the Age Group

lism, complete edentulism and single complete opposing the partial edentulism in relation to the age groups and gender among patients visiting the dental OPD of Isra Dental College Hyderabad.

The results of this study show that there is a significant relationship between the edentulism with the age groups selected and the gender.

The rate of edentulism is estimated at 30% for Africans, Americans, American Indians or Alaska Natives, 26% for Caucasians and 24% for Hispanics¹². Complete edentulism is an international problem, particularly in the age group of 65 years and older. The condition do not seem to be focused in developing countries, as Ireland (48.3%), Malaysia (56.6%), the Netherland (65.4%) and Iceland (71.5%) report some of the highest levels^{12, 22}. While women have been losing all their teeth at 3% higher rate in the USA than men¹².

According to the gender, this study showed that the complete edentulism were most common in males and partial edentulism in females. Kaira Singh et al¹⁰ was conducted study in rural and urban population of Udaipur district of Rajasthan, he observed in his study that out of 524 completely edentulous subjects, 323 subjects were male and 201 subjects were females. This tendency for more number of male than female subjects is consistent with the study of Sakkiet al²³ and Sonkesariya⁹.

Khazaeiet al¹⁸ conducted community based study, he observed that tooth loss and edentulism is more prevalent in males. Same results were found by Muller et al⁶, Hessari et al²⁴ and Okoro et al²⁵ as well.

According to age wise distribution of subjects, this study showed that the partial edentulism were more common in age group 3 (31-40 years) and complete edentulism in age group 6 (60+ years).

Kaira Singh et al¹⁰ conducted study in rural and urban population of Udaipur district of Rajasthan, he observed in his study that higher percentage of complete edentulism was found in female subjects in the age group of 30-50 years and 51-70 years in rural (52.3%) and urban (47.8%) regions, respectively. Highest percentage of male subjects was found in the age group of 51-70 years in both rural (53.8%) and urban (55.1%) regions. This result showed that female subjects were becoming edentulous at an early age than male subjects^{14, 22, 26}.

Various prevalence rates of tooth loss have been reported around the world. Based on Swiss Health

Survey among 14326 subjects, the prevalence of edentulism was 0.3% and 26.8% in 15-24 and 65-

74 years old subjects, respectively²⁷. A systemic review conducted in Iran, the prevalence rate of tooth loss varied from 0.3% in 3-5 years old children to 70.7% in adults older than 65 years²⁸. A systemic review of 73 studies

in Europe showed that edentulism is already rare among people of working age or up to 60 years of age in many European countries, whereas there are still many edentulous subjects in the age group above 65-in studies from the 1990s, the prevalence varied between 15% and 72%⁶.

Ariga and Bridgitte⁴ conducted study in rural South India; he observed that 27.9% of an elderly in the 70-79 years of age group were completely edentulous. This estimate was higher than the WHO national estimate of 19% in this age group²⁹. Ariga and Bridgitte⁴ were also observed that proportion of partially edentulism in an elderly subjects were 64.8%. this proportion were increased with age. It was 59.7% in the age group of 60-69 years and 83.7% in the age group of 70-79 years. Other studies were consistent with this observation that edentulousness increases with age^{30, 31}.

Additional prospective studies are required to evaluate the possible association between metabolic syndrome and tooth loss. Community programs directed towards promoting the oral health and multidisciplinary efforts are suggested for prevention of tooth loss. Further researches are needed to determine the main risk factors of tooth loss and its possible consequences among local population.

CONCLUSION:

The results of this study demonstrate that partially edentulous jaws are more prevalent as compared to completely edentulous jaws.

It is very essential to provide the local dental health education and treatment to the entire local population of Hyderabad in future and educate them the importance of edentulism and its overall impact on the health.

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