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Original Research

Analysis of oral prosthetic treatment pattern and incidence of tooth loss in edentulous patients of a known population

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***ABSTRACT*:**
Background: Oral health care management among the elderly differs from the rest of the population due to some physiological and general health status changes related to age. DMFT is the most common index used for registration of dental health status in epidemiological studies, but it could not provide enough information about the functionality of remaining dentition. **Aim of the study:** To assess pattern of oral prosthetic treatment and prevalence of dental diseases in edentulous patients in North Indian population. **Materials and methods:** The present study was conducted in the Department of Prosthodontics of the Dental institution. For the study, a survey was conducted among 500 residents of a town in North India. The age of the participants ranged from 35-74 years. 289 patients were male and 211 were females. Data collection proforma was divided into two parts; first part was used to obtain information about variables like regarding the subject's personal details, sociodemographic characteristics, oral hygiene practices, habits oral health knowledge, availability and utilization of dental services and self-perceived oral health, and need for treatment. **Results:** It was observed that there were 289 male patients and 211 female patients in the study group. The mean age of the patients was 52.36 years with age ranging from 35-75 years. It was seen that highest mean tooth loss was seen in age range 65-75 years. **Conclusion**: Within the limitations of the present study, it can be concluded that dental disease are more commonly seen in old age patients as compared to young age patients. Furthermore, dental diseases are more common in males as compared to females.
Keywords: Oral Health, dental diseases, survey

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Introduction:
Oral health care management among the elderly differs from the rest of the population due to some physiological and general health status changes related to age. [1] The most frequent oral diseases which affect older adults as dental caries and periodontal diseases could lead to teeth loss which is an important predictor for the oral health-related quality of life. [2] DMFT is the most common index used for registration of dental health status in epidemiological studies, but it could not provide enough information about the functionality of remaining dentition. [3] Many epidemiological studies expressed oral functionality by a number of the remaining teeth, but it was questioned whether just the number was adequate to describe the functional status of dentition. [4] The most reliable discoveries tending to the issue recommend age, sex, financial status, social qualities toward oral well-being, and other organic and conduct factors as affecting tooth loss. Achievement is estimated by the declining rates of edentulous and an

expansion in the quantity of retained teeth. [5] The loss of teeth happens regularly because of traumas or caries movement and takes much less time because of genetic formative imperfections, for example, tooth abnormality or hypodontia. Poor oral cleanliness, tobacco smoking, and high alcoholic utilization are thought to be synergistic hazard factors. As it were, their counteractive action and control rely upon a man's way of life and behavior. [6] Hence, the present study was conducted to assess pattern of oral prosthetic treatment and prevalence of dental diseases in edentulous patients in North Indian population.

Materials and methods:

The present study was conducted in the Department of Prosthodontics of the Dental institution. The ethical clearance for the study was approved from the ethical committee of the hospital. For the study, a survey was conducted among 500 residents of a town in North India. The age of the participants ranged from 35-74 years. 289 patients were male and 211 were females. A written informed consent was obtained from the participants. Data collection proforma was divided into two parts; first part was used to obtain information about variables like regarding the subject's personal details, sociodemographic characteristics, oral hygiene practices, habits oral health knowledge, availability and utilization of dental services and self-perceived oral health, and need for treatment. The second part contains indices like Community Periodontal Index and Dentition Status (2013). Subjects falling within the stipulated age range, who agreed to participate in the research and were cooperative, were included. Physically and mentally challenged subjects, with supernumerary teeth not having the cognitive ability to answer the questionnaire, and subjects who have not given consent were excluded from study.

The statistical analysis of the data was done using SPSS version 11.0 for windows. Chi-square and Student's t-test were used for checking the significance of the data. A p-value of 0.05 and lesser was defined to be statistical significant.

Results:

Table 1 shows demographic data. It was observed that there were 289 male patients and 211 female patients in the study group. The mean age of the patients was 52.36 years with age ranging from 35-75 years. (Fig 1)

Table 2 shows mean tooth loss in relation to age group and gender. It was seen that highest mean tooth loss was seen in age range 65-75 years. Also, the mean tooth loss was more in males as compraed to females. (Fig 2)

Table 1: Demographic data

Variables	No of patients
Mean age (years)	52.36
Number of male patients	289
Number of female patients	211
35-44 years	101
45-54 years	129
55-64 years	140
65-75 years	130

Fig 1:

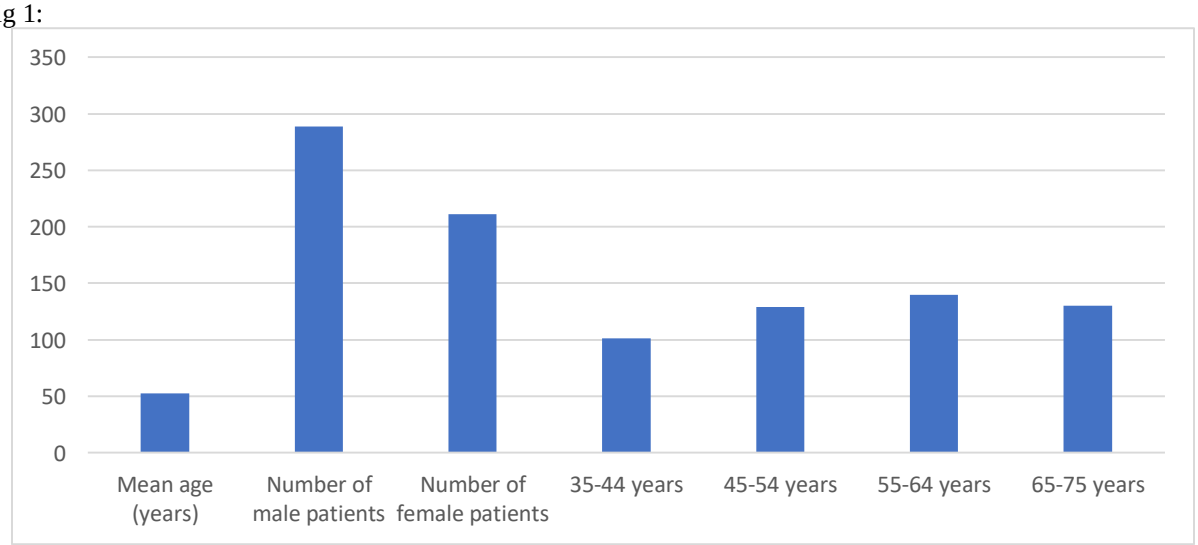
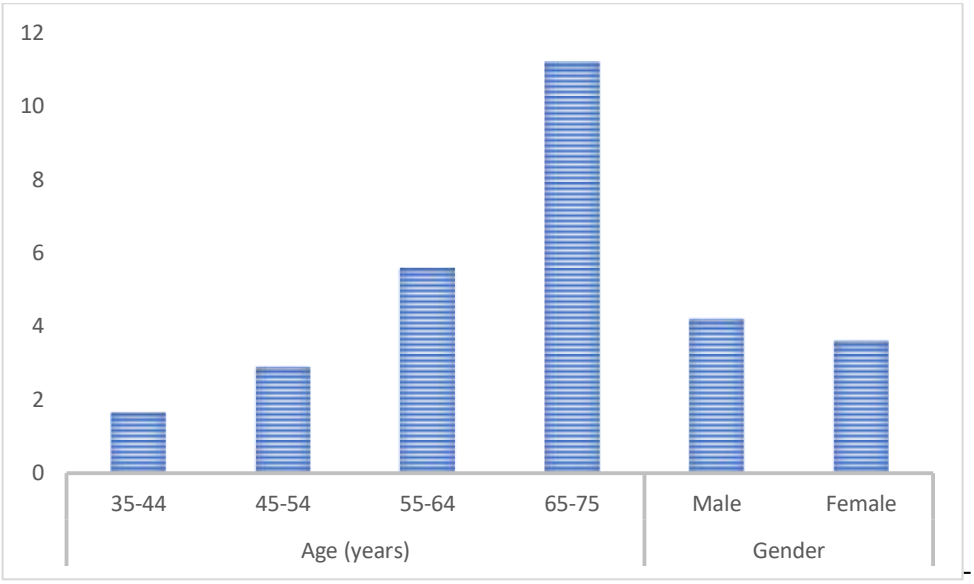


Table 2: Mean tooth loss in relation to age group and gender

	Variables	Mean	p-value
Age (years)	35-44	1.65	0.001
	45-54	2.9	0.32
	55-64	5.6	0.25
	65-75	11.21	0.57
Gender	Male	4.2	0.05
	Female	3.6	0.23

Fig 2:



Discussion:

In the present study, we observed that mean tooth loss was more commonly seen in elderly patients and it was comparatively less in young age individuals. Also, males have more prevalent dental diseases as compared to females. The results were compared with previous studies from the literature and results were found to be consistent. Fayad MI et al determined the prevalence and pattern of partial edentulism among dental patients attending the College of Dentistry, Aljouf University, Saudi Arabia. A total of 142 patients were selected, and the prevalence of partial edentulism among the selected patient was recorded. Patients were grouped into three age groups; Group I: 21–30 years, Group II: 31–40 years, and Group III: 41–50 years. Kennedy's classification was used to determine the pattern of partially edentulous arches. Modification areas were not included in the assessment to avoid complexity. Data was analyzed using the Statistical Package for the Social Sciences version 20.0 for windows. The results showed that the occurrence of Kennedy Class III partial edentulism was 67.2 % in the maxillary arch and 64.1% in the mandibular arch. Followed by Class II in both maxillary and mandibular arch with an average of 16.3 % in maxillary arch and14.8% in the mandibular arch. Based on these results, class III has the highest prevalence in group II (31- 40 years). Class I and class II have the highest incidence among group III Patients (41–50 years). They concluded that among selected patients, Class III dental arch was the most prevalent pattern in maxillary and mandibular arches. Class IV being the least dominant pattern between all classes. There are a rise in Kennedy Class I and Kennedy Class II pattern and a decline in Class III and Class IV with an increase in age. Moaleem MA et al determined the frequency of Kennedy's classes in each arch among different age groups, gender and to find out the relationship between khat chewing and the pattern of partial edentulism. The data was collected from 780 subjects reporting to the College of Dentistry, Jazan University, who required removable partial dentures. Clinical intra-oral and radiographic examinations were done. The study subjects were divided into five age groups, 20-29, 30-39, 40-49, 50-59 and ≥ 60 years respectively. Khat chewing hours/day and type of Kennedy's classes were recorded. The data were entered into a Statistical Package for Social Sciences program and analysed accordingly using Fisher-Exact test. Class III was the highest in all middle age groups followed by Class I. Class III was the highest in males, while in females, Class I was the highest in both arches. Class IV was the lowest in all age groups, both arches, and

genders. Among khat chewers Class III was the highest followed by class I in both arches. Class IV was the highest in >12 hours duration in maxilla but in the mandible, Class I and II were the highest in 1-6 hours duration. The obtained p-values were statistically significant ($p<0.001$) in all tested variables and age groups. They concluded that Kennedy's Class III was the highest followed by Class I, while Kennedy's Class IV was the lowest in all age groups and both arches regardless of khat chewing durations. In males Class III, was the highest, while in females Class I was the highest in both arches. [7, 8]

Jeyapalan V et al reviewed the prevalence of partial edentulousness and its correlation to age,gender, arch predominance, socio economic factors and incidence of various Kennedy's Classes. Key observations drawn from the review are as below. There is no gender correlation for partial edentulism.Prevalence of partial edentulism is more common in mandibular arch than maxillary arch.Younger adults have more Class III and IV RPDs. Elders have more distal extension RPDs Class I and II. Ariga P et al evaluated the prevalence of edentulousness, patient's perception on dietary changes resulting from tooth loss and to identify the disparity between actual and patient perceived need to replace missing teeth in an elderly rural population in south India. A cross sectional study using the systematic cluster sampling method was used to select the study sample of 150 elderly men and women. Data were collected using questionnaires and oral examination. The data were statistically analyzed using chi square test and pearson correlation. 15.6% of the rural elderly were completely edentulous and 54.7% were partially edentulous. Observed differences in distribution between the sampled elderly age groups were found to be statistically significant. Although 70.3% of the evaluated elderly actually required prosthodontic treatment, only 14.4% perceived the need to replace missing teeth. A small percentage of the elderly (18%) perceived a severe change in their diets due to tooth loss. Thirty three percent of them perceived a moderate change and 28% felt that there were no dietary changes because of tooth loss. They concluded that it is essential to identify feasible strategies to provide primary dental health education and treatment to all rural elderly in the future. [9, 10]

Conclusion:

Within the limitations of the present study, it can be concluded that dental disease are more commonly seen in old age patients as compared to young age patients. Furthermore, dental diseases are more common in males as compared to females.

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