

TYPE OF PARTIALLY EDENTULOUS MANDIBULAR ARCHES SEEN AMONG PATIENTS AT THE DENTAL CLINICS OF RAK COLLEGE OF DENTAL SCIENCES

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ABSTRACT

The objective of this study was to establish a relationship between the frequency of tooth loss and partial edentulism (according to Kennedy's classifications) among different age groups for both genders seen at RAK College of Dental Sciences (RAKCODS). In this cross sectional retrospective study 200 patients were selected randomly and were used to collect the data. The study was conducted from February 2016 to May 2016. The selected participants were divided into different age groups. Frequency of missing teeth was noted between different age groups and the frequency of various Kennedy's classifications and modifications were also noted. Out of 200 patients, 136 were males and 64 were females with age ranging from 18 to 51+ years. Kennedy's class 3 was the most occurring class (45.5%). In the age group of 21-30 years Kennedy class 3 was noted 17% and Kennedy class 4 was 8%. In the age group of 31-40 years occurrence of Kennedy class 2 was 12%. Kennedy class 1 had the highest occurrence in the age group of 51+ years for both genders. Kennedy class 3 was common in 58 male patients out of 136 and in 33 female patients out of 64. A significant association between age and the occurrence of the different Kennedy's classifications was observed ($p = 0.004$). No association with gender was observed in the occurrence of the different Kennedy's classifications ($p = 0.298$). 147 patients (73.5%) had partially dentate arches with no modifications. 53 patients (26.5%) were seen with Kennedy class with 1st modification. No association with gender was observed in the occurrence of modification 1, 2 and 3 ($p = 0.358$).

It was concluded that the highest percentage of tooth loss was among patients aged between 31-40 years, and Kennedy's Class 3 was the most frequently seen tooth loss.

Key Words: *Kennedy classification, partially edentulism pattern, mandibular jaws, cross sectional study.*

INTRODUCTION

Edentulism either partial or complete is an indicator of oral health of a population, it may reflect

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Received for Publication: March 16, 2017

First Revised: April 15, 2017

Second Revised: April 15, 2017

Approved: May 17, 2017

the behavior and attitude towards the dental and oral care.¹ Tooth loss has been reported to be mainly caused by dental caries and periodontal disease.² A number of other risk factors for tooth loss have been identified including lack of education³, social status⁴, alcohol consumption⁵ and cigarette smoking.⁶ Loss of one or more teeth disturbs the functional balance of the remaining teeth and may result in migration, widening of proximal contacts and food impaction, bone resorption, occlusal interferences, loss of vertical dimension, altered mastication, anterior overloading, temporomandibular dysfunction with para-functional activities, altered phonetics, aesthetics and psychological problems such as affected self-esteem and confidence which ultimately affects the quality of life.^{7,8} It has been reported that tooth loss differs by arch, and lower molars were the most frequently missing teeth followed by the upper molars and periodontal disease to be the most likely causative factor as reported by Odusanya et al.¹⁰

During the past few decades, reports have shown a decline in the prevalence of tooth loss in developed countries, this may be related to the increased accessibility and availability of prevention and control programs regarding oral disease. Partially edentulous arches can be classified by various methods; Kennedy's classification is widely accepted by practitioners and lab technicians, due to its advantages of immediate visualization and recognition of prosthesis support. Kennedy's classification comprises of four main types of partially edentulous arches as;

- Class I:** Bilateral edentulous area located posterior to the remaining natural teeth.
- Class II:** Unilateral edentulous area located posterior to the remaining natural teeth.
- Class III:** Unilateral edentulous area with natural teeth anterior and posterior to it.
- Class IV:** Single anterior edentulous area, which crosses the midline of the arch, with remaining teeth located only posterior to it.

The pattern of tooth loss has been evaluated in many selected populations in different countries, in which a particular tooth or group of teeth are more frequently lost and form a pattern of tooth loss.

The purpose of this study was to assess the pattern of tooth loss and to find out a relationship between the frequency of tooth loss and partial edentulism (according to Kennedy's classifications) among different age groups of patients for both genders seen at RAKCODS clinics, which will help us to generate more affective disease prevention strategies through educational programs regarding maintenance of oral hygiene and devise treatment plans for the patients.

METHODOLOGY

This cross sectional retrospective study was done at RAKCODS clinics. 200 were selected randomly and were used to collect the data. The information of the patients was collected through a well prepared proforma after taking consent. Age, gender and the Kennedy's classification of the mandibular arch were recorded. Causes of tooth loss and other health conditions of the patient were not noted because it was not the part of present study. Previous dental history taken and clinical examination was performed and diagnostic models were made after taking impression with alginate. Models were used to keep the record. The data were analyzed by descriptive statistics and Chi-square test by using SPSS version 15, software for Windows.

RESULTS

Details of the results can be seen in Tables 1-4 and Fig 1-2.

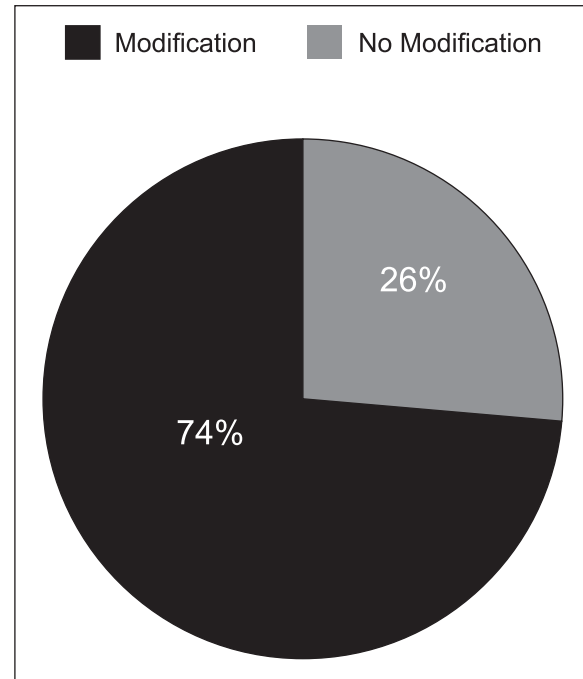


Fig 1: Total modification observed in the sample

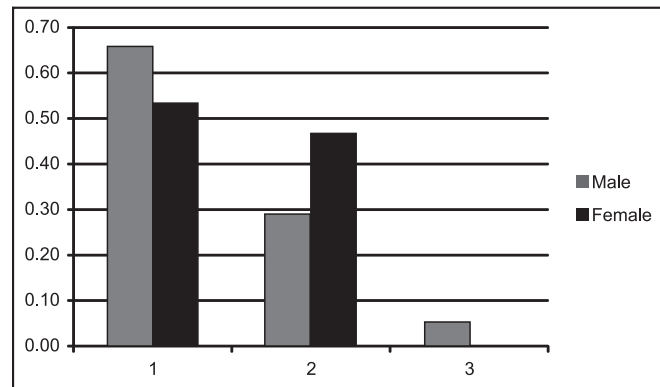


Fig 2: Occurrence of classification modification and gender

TABLE 1: AGE DISTRIBUTION

Age groups (years)	Percentage
18-20	6
21-30	28
31-40	29
41-50	24
51+	15

TABLE 2: STUDY GROUP AND KENNEDY'S CLASSIFICATION DISTRIBUTION

Kennedy class	Study Group (%)
Class I	15
Class II	31
Class III	46
Class IV	8

TABLE 3: KENNEDY'S CLASSIFICATION ACCORDING TO AGE GROUPS IN PERCENTAGE

Kennedy class	Age Groups					P value
	18-20 years	21-30 years	31-40 years	41-50 years	51+ years	
Class I	8	11	9	21	31	0.004
Class II	8	24	42	36	24	
Class III	83	62	40	30	34	
Class IV	0	4	9	13	10	

TABLE 4: KENNEDY'S CLASSIFICATION ACCORDING TO GENDER IN PERCENTAGE

Kennedy class	Gender		P value
	Male	Female	
Class I	16	14	0.298
Class II	31	31	
Class III	43	52	
Class IV	10	3	

DISCUSSION

In this study young adult patients (31-40) years were 29% which are in agreement with previous studies,^{13,14} Reason could be that this age group patients are more conscious regarding their dental treatment.

Percentage distribution of various Kennedy's classes of the present study is in agreement with the similar studies performed by Filiz KEYF¹⁶ and Bharathi M.¹⁷

Kennedy class III was the most common edentulous space in the current study followed by Kennedy class II. This is in agreement with previous studies,^{9,15} but contrary to the report by Kefy who stated that Kennedy class I and II were the most edentulous spaces.¹⁶

Gender has been one of the key factors analyzed by various authors. Most of the authors have concluded that there is no significant gender correlation with occurrence of partial edentulism. However, few studies have observed that there has been significant relationship between gender and various Classes of partial edentulism.¹⁷ The results of this study reinforced the first opinion as the results showed that there was no statistical significant difference between both genders. However, this is contrary to the report of Arigbede and Taiwo¹⁹ who found higher female distribution. On the contrary studies by Olusile AO and Akeredolu PA have reported that males were more partially edentulous than females which could be due to poor attitude toward oral health and the fact that they participate more in sport and other activities that could lead to loss of teeth.

In this study Most of the patients had partially dentate arches with no modifications have been noted,

which is not in agreement with the study done by Rehman HKA²⁰ in which Class III the posterior modification area was the most frequently presented in both arches (43.47% in the maxilla and 52.42% in the mandible).

CONCLUSION

Kennedy's class III was found the most common in young adults of 31-40 years. Gender had no significant effect on the occurrence of various Kennedy's classes, but age had a significant effect.

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- 2 Maha Saeed:** Data Collection, Methodology
- 3 Feroze Ali Kalhoro:** Introduction and Discussion Writing
- 4 Mansoor Ahmed Channa:** Literature Search
- 5 Kelash Kumar:** Result Analysis