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Frequency of Occurrence of Different Kennedy Classified Cases in College of Dentistry (Iraq)

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Abstract

The Aim: To assess the incidence of Kennedy's classification among partially edentulous individuals along with its correlation with age and gender.

The Method: The subject in this study was consisted of 191 patients. All patients seeking for replacement of missing teeth were included in the study. The data related to partial edentulism was recorded in a self-designed proforma. The clinical data were summarized, frequencies and percentages as appropriate in association with age, gender. Kennedy's classification was used to determine the pattern of partially edentulous arches.

The Result: The occurrence of Kennedy Cl. III partial edentulism was 17.8% in the maxillary arch and 9.42% in the mandibular arch. Followed by Cl. II in both the maxillary and mandibular arch, while cl. IV was the least among the other classes. The cl.III has the highest prevalence in group III patients. Cl. I and II have the highest incidence among group IV patients. The number of female was more than male and the highest frequency of cl. II was for females, followed by cl. III, while the lowest cases was cl. IV, for males, the most frequent was cl.II followed by cl. IV.

The Conclusion: There is an increase in Cl.I and II and a decrease in Cl. III and IV with an increase in age. The prevalence of Cl. III was predominant among younger population, whereas in group IV Cl.I was predominant.

Keyword: *Frequency, occurrence,different, kennedy, dentistry.*

Introduction

Psychological, social,and biologic levels of the oral health-related quality of life are affected by tooth loss, the people can be early seeking for treatment significantly if received good education which help them giving more attention to signs of tooth loss associated diseases thus reduced the degree of tooth loss in different countries in last periods[1-3]. The tooth loss across all ages have been observed by Bruce[4] who found that the major cause of losing tooth was the caries (83%) then the periodontal disease (17%).The improvement in the oral health of the population can be reflected by the reduction in edentulous people number[5,6], and also it was mean that preventive measures by the health care system was successful.[1,7] Recently, there were a decrease in edentulous patient's number is predicted by trends in dental health care that support natural dentition preservation.[8] In maxillary and mandibular arches, more than 65000 potential mixtures of partial edentulism pattern were found, therefore, the classification of partially edentulous arches that have common characteristics was reasonable to enable the communication between the various dental professionals[9-12] The partially edentulous arches can be classify according different classifications to distinguish probable combinations of tooth to ridges, and also loss of teeth patterns is a good pointer for the oral hygiene levels, the management and the magnitude of dental health problems, dental health awareness, and the edentulous space was used to identify tooth loss, which is a space in the dental arch naturally full by one tooth or more, for different reasons it may be

partial or complete.[13-15] Presently, the best mostly accepted classification for partially edentulous arches was the Kennedy's classification because it allow the recognition of prosthesis support, direct visualization, also the valuation of the design of removable partial denture characters.[13-15] In different countries the tooth loss pattern has been assessed in various populations.[14-19]

In males a greater incidence of edentulism has been found by Hoover and McDermount [20] than females, on the other hands, Marcus *et al*. [21] found that there was no relation between the gender and the edentulism prevalence . The health care epidemiological information and its associated concerns are important for designing health care in the future.[22] As epidemiologic findings on the loss of tooth and the edentulism were differ significantly in prevalence between countries and between geographic areas within countries.[23-25]

The aim of the study: The present study aimed to evaluate the incidence of Kennedy's classification between partially edentulous individuals along with its correlation with age and gender, and because there are no available studies (to our knowledge) that have investigated the prevalence of partial edentulism among subjects in Babylon region, this would be of valuable information to oral health planners for proposing strategies helping in the development of dental health care management in Iraq.

Patients and Method

This cross-sectional study was approved by the Research Committee at the Faculty of Dentistry in Babylon University. The survey was conducted in Prosthodontics Department at the College of Dentistry/ Babylon University/Hilla/Iraq. The study was conducted in patient reported to outpatient section of the college. The data collections were carried out during the period of October 2016 – May 2017 for patients requiring removable partial dentures. The subject in this study was consisted of 191 patients (90 male and 101 females). All patients seeking for replacement of missing teeth were included in this study. All the patients attended to the college clinics were surveyed and the cases for this study are selected according to the certain criteria's. The inclusion criteria consisted of patients from both genders, above the age of 20 years, having partially edentulous areas in either or both arches. The Kennedys modification areas were not included to avoid the complexity. Patients with an only missing third molar, unerupted or congenitally missing teeth, root tips, and loose teeth that were indicated for extraction were not included in the study. All relevant data related to partial edentulism was recorded in a self-designed proforma. The clinical data were summarized, frequencies and percentages as appropriate in association with age, gender. Kennedy's classification was used to determine the pattern of partially edentulous arches. Modification areas were not included in the assessment to avoid complexity.

Result

Prevalence and pattern of partial edentulism among dental patients attending College of Dentistry, babylon University were studied. The mean age of the selected patients was 33.3 years. The table (1) show the age-group distribution. The results in table (2) and fig. (1) showed that the occurrence of Kennedy Class III partial edentulism was 17.8 % in the maxillary arch and 9.42 % in the mandibular arch. Followed by Class II in both the maxillary and mandibular arch with an average of 11.51% in the maxillary arch and 14.65% in the mandibular arch, while class IV was the least among the other classes in both the maxillary and mandibular arch with an average 10.99%. Based on these results, Kennedy's Class III was the most prevalent partially edentulous pattern 27.22% among the maxillary and the mandibular arch.

Distribution of different classes in the age groups is shown in table 3 and figure 2. The results reveal that class III has the highest prevalence in group III (40–49 years) patients. With increasing age, a transition of bounded saddles into free end saddles was found. Classes I and II have the highest incidence among group IV patients (40–49 years), as shown in Figure 3. It is obvious from table (3) that the highest number of patients was in group III (40-49) years in both arches.

In this study the number of female was more than male and the highest frequency of Kennedy cl. II was for females, followed by cl. III, while the lowest cases was cl. IV, for males, the most frequent was cl.II followed by cl. IV (table 4 and fig. 3).

Table 1: The age-group distribution

Groups	Ages
G.I	20-29 Y
G.II	30-39 Y
G.III	40-49 Y
G.IV	50-59 Y
G.V	60-69 Y
G.VI	70-80 Y

Table 2: Incidence of different Kennedy's classes among the maxillary arch and the mandibular arch.

Arch	Cl. I n (%)	Cl. II n (%)	Cl.III n (%)	Cl. IV n(%)	Total n (%)
Maxillary	22 cases (11.51 %)	22 cases (11.51 %)	34 cases (17.8 %)	21 cases (10.99 %)	99 cases (51.83 %)
Mandibular	25 cases (13.08 %)	28 cases (14.65 %)	18 cases (9.42 %)	21 cases (10.99 %)	92 cases (48.16 %)
Total (n)	47(24.59%)	50(26.16%)	52(27.22%)	42(21.98%)	191

Table 3: Frequency of different classes of partial edentulism according to age:

Age Gr.	Cl.I (%)	Cl.II (%)	Cl. III (%)	Cl. IV(%)	Total (n)
G.I	0 case	0 case	4 cases (2.09 %)	19 cases (9.94 %)	23
G.II	5 cases (2.61 %)	17 cases (8.9 %)	15 cases (7.85 %)	2 cases (1.04 %)	39
G.III	18 cases (9.42 %)	18 cases (9.42 %)	20 cases (10.47 %)	13 cases (6.8 %)	69
G.IV	16 cases (8.37 %)	11 cases (5.75 %)	8 cases (4.18 %)	5 cases (2.61 %)	40
G.V	5 cases (2.61 %)	3 cases (1.57 %)	8 cases (4.18 %)	3 cases (1.57 %)	19
G.VI	1 case (0.52 %)	2 cases (1.04 %)	0 case	1 case (0.52 %)	4

Table 4: Distribution of study subjects according to gender and type of edentulism:

Gender	Class I	Class II	Class III	Class IV	Total
Male	22 cases	25 cases	22 cases	22 cases	91
Female	27 cases	31 cases	30 cases	13 cases	100

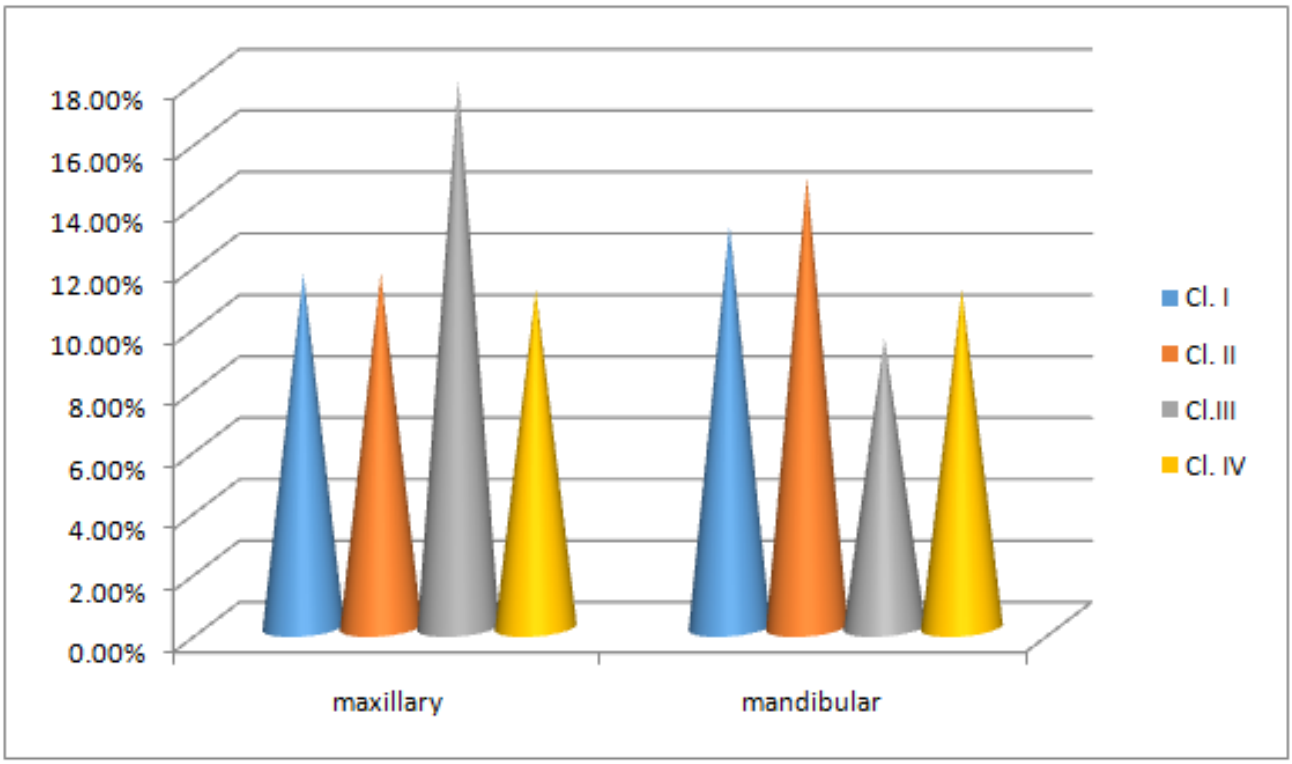

Fig. 1: Incidence of different Kennedy's classes among the maxillary and mandibular arches.

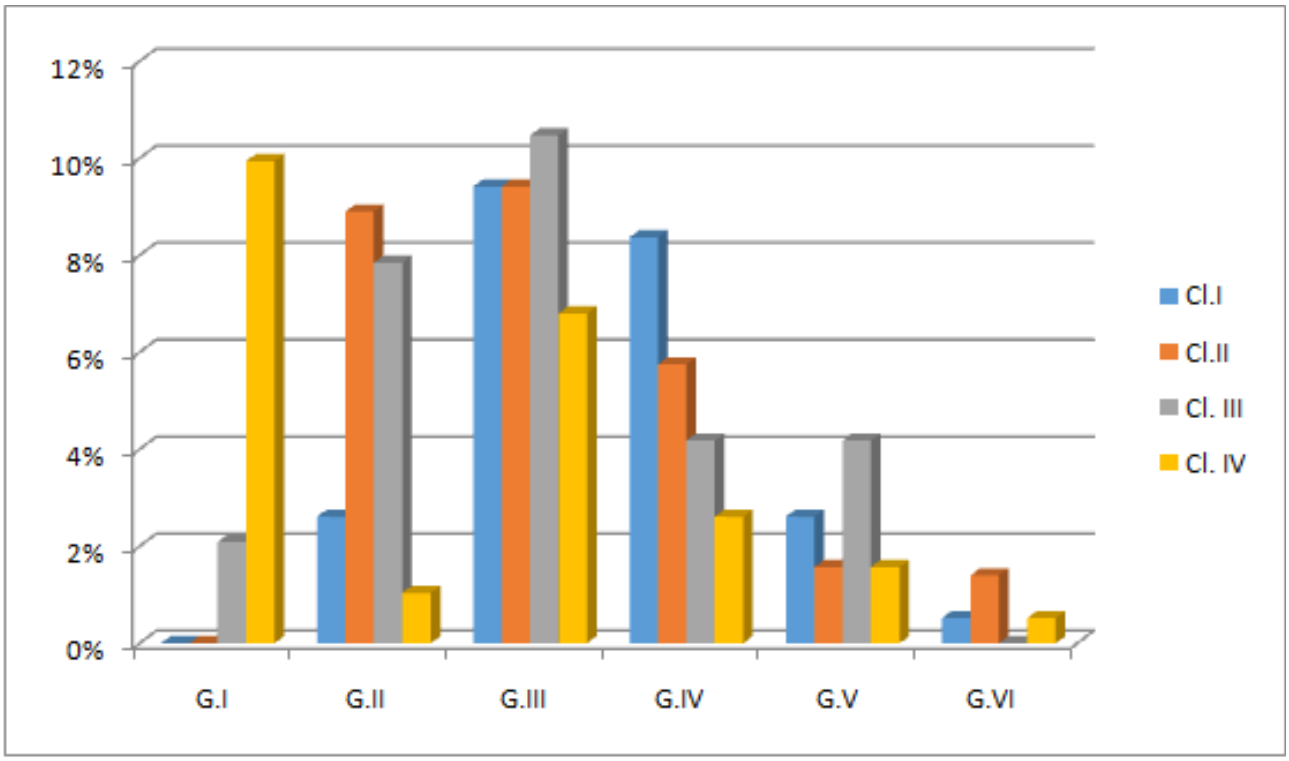

Fig. 2: The age-wise distribution of the different classes of Kennedy's classifications

Discussion

It is increasingly recognized that the impact of disease on quality of life should be taken into account when assessing health status . It is likely that tooth loss in most cases being a consequence of oral diseases which affects the oral health related quality of life.[1-3] The main aim in using a classification for RPDs is to facilitate the description of partially edentulous cases. In the current study, Kennedy classification was selected because it simplifies the description of partially edentulous cases, permits immediate visualization of the partially edentulous arch, provides a logical way to display the problems of design, and to simplify the application of basic principles of partial denture design.[14] The present study was initiated to assess the prevalence and pattern of partial edentulism among dental patients attending the College of Dentistry, babylon University, Iraq. The findings of the present study showed that the frequency of partial edentulism in the maxillary arch was higher than the partial mandibular at almost equality in the prevalence of Kennedy's classification in both arches edentulism among the study population, and this result was disagree with the study of Curtis et al [9] who reported that mandibular removable partial dentures are more common than maxillary removable partial dentures, and that the class I mandibular RPD is the most prevalent type of RPD for either dental arch.

In this study Kennedy's Class III was found to be the most prevalent pattern of partial edentulism and this result was agree with the study of Hatim et al.[28] which state that the Kennedy Cl.III was the most common pattern (57.14%) in a sample of the Iraqi population, and with the study of Benin, Ehikhamenor, et al.[29] which state that the most commonly restored edentulous area was Kennedy's class III (57.3%). The data of present study suggesting predominance on class III pattern of partial edenulism may be due to the fact that a higher frequency of younger age groups was encountered, whereas a higher frequency of older population was seen in other studies, and the study reported the increased awareness of among the younger populations with large number of younger groups reporting to the prosthodontic department for replacing missing teeth which that tooth loss may be due to the fact that the first molar is the first permanent tooth to erupt into the oral cavity, having a higher caries percentage and a higher chance of the tooth being extracted prior to the anterior teeth and/or they have greater surface area for caries attack because

at this early age the children cannot perform adequate oral hygiene maintenance and their low socioeconomic status leading to early tooth loss .

Conclusion

The present study showed that, among dental patients attending outpatient clinics, College of Dentistry, Babylon University, there is an increase in Cl.I and II Kennedy classification and a decrease in Cl. III and IV with an increase in age, The prevalence of Class III was predominant among younger population of 40–49 years, whereas in group IV (50-59) years Cl.I was predominant. It can be stated that the need for prosthodontics care is expected to increase with age, and hence, more efforts should be made for improving dental education and motivation among patients in Hilla region.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Dentistry and all experiments were carried out in accordance with approved guidelines.

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