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RESEARCH ARTICLE

PREVALENCE AND ASSESSMENT OF PARTIALLY EDENTULISM ACCORDING TO KENNEDYS CLASSIFICATION IN SULAIMANI CITY

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ABSTRACT

Background: Partial edentulous arches classification helps to identify possible combinations of teeth to edentulous ridges.
Aim: To determine the prevalence and patern of partial edentulisim among a group of Kurdish population.
Methodology: A cross sectional study to be conducted among 600 patients (339 males and 261 females) who visited piramerd dental center in sulaimani city seeking for RPD.
Result: Kennedy's class III in both dental arches was most dominant pattern at frequency of (53.2%) for maxilla and (44.7%) for mandible, Kennedy's class I (9.4%) was least frequent in maxilla while Kennedy's class IV (9.8%) was least common for mandible.
Conclusion: Frequency of partial edentulisim is more common in mandibular arch than maxillary arch. Males found to be more prone for partial edentulism than females

INTRODUCTION

Partial edentulisim is a dental arch in which one or more but not all natural teeth are missing. Which is resulted from caries, periodontal problems, traumatic injuries, impactions, supernumerary teeth, neoplastic and cystic lesions (Muneeb, 2013; Abdel-Rahman *et al*., 2013). as a result this partial edentulism results in drifting and tilting of adjacent teeth, supra eruption of opposing teeth, altered speech, changes in facial appearance and tempero-mandibular disorders (Muneeb, 2013; Abdel-Rahman *et al*., 2013; Abdurahiman *et al*., 2013). Partial edentulism is one of the widely studied topics in dentistry. The pattern of partial edentulism has been evaluated in many selected populations in different countries. Several studies have analysed the correlation between partial edentulism and its influencing factors like socio-economic parameters, age, and gender (Reddy *et al*., 2012; Esan *et al*., 2004).

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The variation in number and location of the edentulous space and its relation to the remaining natural teeth necessitates to classify the partial edentulous arches (Henderson *et al*., 1985). And also to facilitate communication among dental colleagues, students, and technicians (Sadiq and Idowu, 2002).A simple estimation of the proportion of partially edentulous persons is a rough indication of the prevalence of dental diseases and the success or failure of the dental care. At present kennedy's classification (which was originally proposed by Edward Kennedy in 1925) of partially edentulous arch, is universally acceptable.He divided all partially edentulous arches into four main types. In his classification, edentulous areas, other than those determining the main types, were named as modification spaces. The Kennedy's classification is as follow (Carr *et al*., 2005):

- **Class-I:** Bilateral edentulous area present posterior toremaining natural teeth
- **Class-II:** Unilateral edentulous area present posteriorto remaining natural teeth
- **Class-III:** Unilateral edentulous area with natural teethboth anterior and posterior to it

- **Class-IV:** Single but bilateral edentulous area presentanterior to remaining natural teeth.

Literature review showed that tooth loss differs by arch (Sadiq and Idowu, 2002), with tooth loss being more common in maxilla than in the mandible, and posterior tooth loss usually preceding anterior tooth loss(Nallaswamy, 2007). The pattern of tooth loss has been evaluated in many selected populations in different countries (Temitope *et al*., 2004; AL-Dwairi, 2006). Hoover and McDermount reported a higher prevalence of edentulous arches in males than females (Hoover, 1989). The aim of this study is to determin the prevalence of different classes of partial edentulism arch according to Kennedy's classification in sulaimani city during one year period.

RESULTS

The result of the present study revealed that out of 600 subjects that included in this study 339(56.5%) were male and 261(43.5%) were female, 152 patients were having partial edentulisim in both arches. Table 1 shows gender distribution according to different age groups and maximum partial edentulisism was found in the age group of of41-50 years (149 patients) and minimum were found in 15-20 age group(47 patients).Table 2 showes the gender distribution in different kennedy's classification in maxilla, Class III Kennedy's classification were most common in both male and female which was (53.2%) of all classes, while class I was least common among the maxillary kennedy's classes which was

Table 1. Gender distribution in different age group

Gender	15-20	21-30	31-40	41-50	51-60	≥61	Total	Percentage
Male	33	45	58	78	85	40	339	56.5%
Female	14	35	68	71	63	10	261	43.5%
Total	47	80	126	149	148	50	600	100%
Percentage	7.83%	13.33%	21%	24.83%	24.66%	8.3%	100%	

Table 2 Gender distribution in different kennedy's classification in maxilla.

Gender	Class I		Class II		Class III		Class IV		Total	
	n	%	n	%	n	%	n	%	n	%
Male	19	5.2	66	18.2	94	25.9	26	7.12	205	56.5
Female	15	4.2	31	8.5	99	27.3	13	3.58	158	43.5
Total	34	9.4	97	26.7	193	53.2	39	10.7	363	100

Table 4. Gender distribution in different kennedy's classification in mandible.

Gender	Class I		Class II		Class III		Class IV		Total	
	n	%	n	%	n	%	n	%	n	%
Male	80	20.6	46	11.8	77	19.8	20	5.2	223	57.4
Female	32	8.2	19	4.9	97	24.9	18	4.6	166	42.6
Total	112	28.8	65	16.7	174	44.7	38	9.8	389	100

MATERIALS AND METHODS

This cross-sectional study was conducted on 600 patients (339 males and 261 females) who were attended the prosthodontic department in piramerd dental center for construction of removable partial dentures, aged between 15-70 years with the mean of 47 years. 152 patients had partial edentulism of both arches. Intra oral examination of each patient were carried out visually after seating the patient on the dental chair, and using the mouth mirror for identifying the incidence of edentulousness among the maxillary and mandibular arches, and for the type of Kennedy's classification and modification areas, and the area of the missing teeth. The Kennedy classification with the guidelines advocated by Applegate for each partially edentulous arch was recorded. Another categorization of the partially edentulous patients depending on age and gender to determine the distribution of the sample population. The percentage of the distribution of partially edentulous arches by Kennedy classification, the percentage of age and gender were obtained.

(9.4%) of all classes in the maxilla. The number of the patients that having partially edentulism in maxillary jaw were 363 patients, while Figure 1shows the percentage of male in maxilla was highest in class III which was (25.9%) of all maxillary partial edentulism, and female also showed their highest prevalence in class III in maxilla which was (27.3%) of all maxillary partial edentulism.

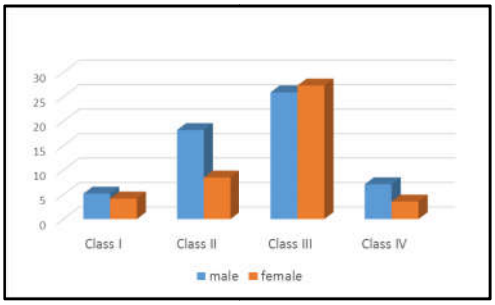

Figure 1. Gender distribution in different Kennedys classification in the maxilla

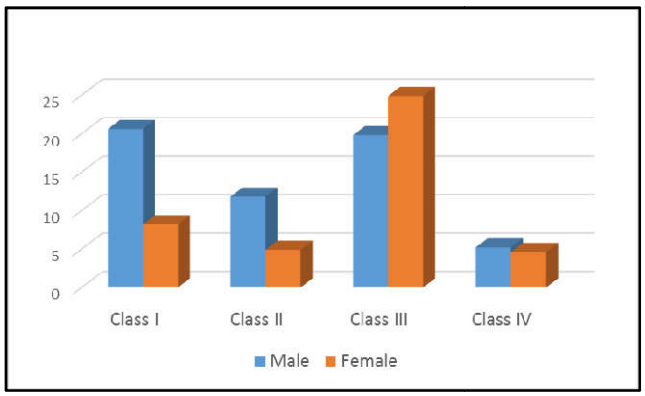

Figure 2. Gender distribution in different Kennedys classification in the mandible

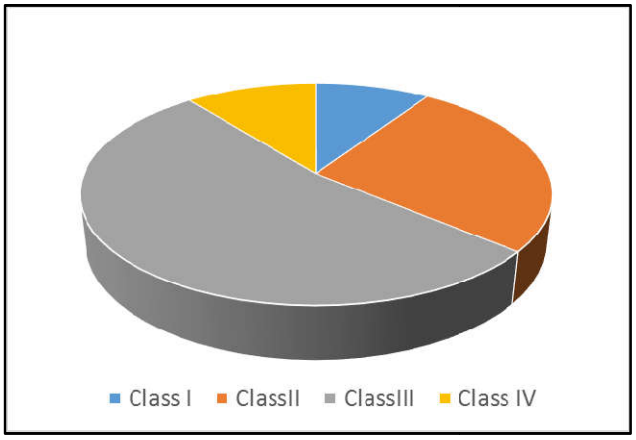

Figure 3. Pi chart of various types of partially edentulism in maxilla

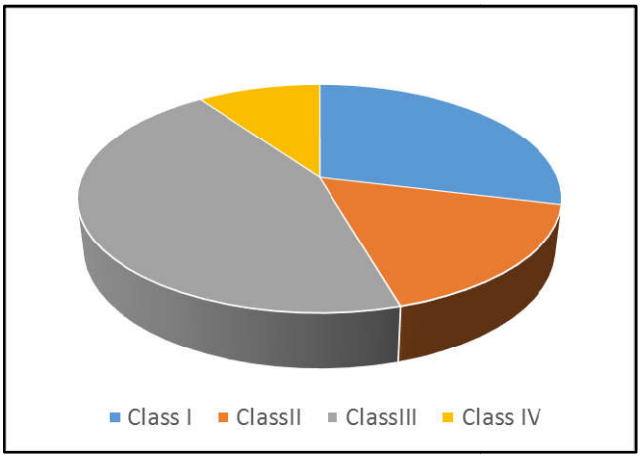

Figure 4. Pi chart of various types of partially edentulism in mandible

Table 3 shows the gender distribution in different kennedy's classification in mandibular arch in all 389 patients that having partial edentulism in mandible. male showed their highest prevalence(20.6%) in class I Kennedy's classification, lowest (5.2%) in class IV, while female were highest in Class III which was (24.9%) and lowest in Class IV which was (4.6%) of all mandibular partial edentulism. The percentages and gender distribution of mandibular partial edentulism is illustrated in Figure: 2.

DISCUSSION

Gender has been one of the key factors analysed 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. In addition, studies have reported that women have more awareness to restore their teeth than men. This may be because of women are more conscious about their appearance and had a better health seeking behavior(13),(14), (15) who support our study which revealed that out of 600 randomly selected patients seeking removable partial dentures 339 were male while only 261 were female. While disagree with (22) who stated that women shows higher proportion of edentulousness than male.The present study revealed that the prevalence of mandibular partial edentulism (64.8%) was higher than maxilla (60.5%) among our study population, this is in harmony with the study carriedout by Curtis *et al.* at the University of California, Schoolof Dentistry (16). And another study was carried out by Naveed *et al.*the result ofthis study is also similar to our study, frequency of partial edentulism was higher in the mandibular arch (17).

It was found that Kennedy's Class III,is the most common pattern of partial edentulism in this study. KennedyClass III pattern of edentulism was most commonlyoccured in both mandible (44.7%) and maxilla (53.2%).This result is in agreement with the study of Shah *et al (*18) also agrees with Al-Dwairi study who statet that class III Kennedy's classification is most commonly present in mandible and maxilla (19) this is due to the fact that mandibular teeth erupt earlier in the oral cavity wich is prone for higher caries rate and higher chance of the tooth extracted (21). While Khalil A *et al*., observed that Kennedy's Class IV was most commonly encountered in maxillary arch and Class I in mandibular arch. In combination type of edentulousness Class I was the most commonly observed classification (20). Also the present study agrees with (Abdel-Rahman HK *et al*,.2013) for the least commonest mandibular Kennedy's classification, which showed that the least edentulism was class IV, but disagree with them for maxillary edentulism, because the present study showed least edentulism was class I in the maxilla.

Conclusion

Prevalence of partial edentulisim is more common in mandibular arch than maxillary arch. Males found to be more prone for partial edentulism than females. Kennedy's class III partial edentulism for both arches found to be most common class of partial edentulism.

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