

Prevalence of Partial Edentulism and its Association to Gender

Research Article

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Abstract

Edentulism (partial or complete) is an indicator of the oral health of a population. Partial edentulism is loss of one or more teeth in one arch due to various reasons like dental caries, periodontitis, trauma, cystic lesions. Partial edentulism not only causes lifestyle compromise but also affects patient's quality of life. Partial edentulism when not addressed leads to compromised occlusion, altered speech, changes in appearance, TMJ problems. The partial edentulism pattern has been observed globally in different populations. The aim of the present study was to assess the prevalence of partial edentulism based on Kennedy's classification, evaluate if Gender has a positive or negative correlation with Partial edentulism. A retrospective evaluation was conducted in the Department of Prosthodontics, Saveetha Dental College by examining the patient record system of the faculty. The study is conducted to find out the prevalence of partial edentulism and its correlation to gender. The study sample consisted of 400 patients who were partially edentulous. Study population consisted of 400 patients of which 220 were males and 180 females. The most prevalent type of partial edentulism is Kennedy's Class III among both genders.

Keywords: Gender; Kennedy's Classification; Partial Edentulism.

Introduction

Partial edentulism or complete tooth loss is prevalent worldwide among elderly. Earlier studies have shown that edentulism affects the health and the overall quality of life of the older generations. [3, 38] An edentulous span is a gap in the dental arch created due to loss of one or more tooth [22, 35] Several causes of edentulism are dental caries, periodontal diseases, trauma, orthodontic treatment, impacted tooth, hypoplasia, supernumerary teeth, neoplastic and cystic lesions [12, 37]. The primary purpose of a classification of partially edentulous arches is to identify potential combinations of teeth to edentulous ridges in order to facilitate communication among dental colleagues, students, and technicians [20, 34, 42].

There are numerous classifications which have been proposed to classify the partially edentulous arches on the basis of the potential combinations of teeth to 4 ridges [16, 45]. Among which currently, Kennedy's classification is probably the most widely accepted one. Kennedy divided all partially edentulous arches into four main groups. In the classification, edentulous areas, other

than those determining the main types, were designated as modification spaces [4, 5, 43]. The Kennedy's classification is as follows. Class I, Bilateral edentulous areas located posterior to the remaining natural teeth. Class II, A unilateral edentulous area located posterior to the remaining natural teeth [7, 23]. Class III, A unilateral edentulous area with natural teeth remaining both anterior and posterior to it. Class IV, A single, but bilateral (crossing the midline) edentulous area located anterior to the remaining natural teeth [2, 11]. Studies on self-perception have shown that tooth loss is associated with aesthetical, functional, psychological, and social impacts on individuals. Partial edentulism is one of the widely studied topics in dentistry [15].

Several studies have analysed the correlation between partial edentulism and its influencing factors like age and gender. Few studies also have analysed the awareness among the subjects to replace the missing teeth. Surveying of RPD patients visiting clinics, clinical records and population in a particular locality have been the common method of evaluation of partial edentulism. Most commonly, recording patient partial edentulism is done by gathering details through clinical examination. Previously our team has

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a rich experience in working on various research projects across multiple disciplines [1, 6, 9, 10, 17, 18, 25, 27, 29, 30, 39, 40, 44, 48, 49]. Now the growing trend in this area motivated us to pursue this project.

Materials and Methods

This Study was performed in a university setting. The data for the study was collected by reviewing patient records from the Faculty of Prosthodontics, Saveetha Dental College and the data was assessed from the time period of June 2019 to April 2020 in this retrospective evaluation. From the patient records all partially edentulous cases were included into the study. Ethical clearance was obtained from the Institutional Ethics Committee of Saveetha Dental College. The cross checking of data including digital entry and photographic data entry was done. The main advantages of this study was that the data was all prevalidated and the main disadvantage was that it was an unicentric study and only a single ethnicity of the population was studied. After retrospective data collection done by the researcher. The data on following variables were tabulated: Gender and Kennedy’s classification. The data was randomly cross verified by faculty of prosthodontics. The sample size consisted of 400 patients. The internal validation was done by complete data collection and verification of data institutionally.

Results & Discussion

There were 400 patients involved in the study out of which 55% of the study participants are males and 45% are females. (Figure 1). Kennedy’s Class III is the most prevalent in both male and females; 32.5% in males and 31% in females. Kennedy’s Class I is 5.25% among males which is the least among that particular gender and 4.25% in the female study population. Kennedy’s Class

II is 8.5% among males and 6.75% among females. 8.35% of the population with Kennedy’s class IV are males and 3% are females (Figure 2). There is a statistically significant difference between gender and partial edentulism among the study population. (Figure 3, Table 1).

The main usage of Kennedy’s classification in this study for partial edentulism is for the ease of description of partially edentulous cases. In this study, Kennedy classification is used because it simplifies the description of partial edentulism, allows 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. In this study, it was observed that Kennedy’s Class III is the most common among both males and females. 220 males and 120 females were included in this study as samples. Partial edentulism is more common in males than females. Kennedy’s Class III, which is the most common seen in 130 males and 124 females. The present study was initiated to assess the prevalence and pattern of partial edentulism. According to previous study conducted by Ashraf et al., [19] the commonly occurring type of partial edentulousness was Kennedy’s Class III in maxilla comprising 23.3 percent and in mandible 22.1 percent. The prevalence of tooth loss is more prevalent in males which is 58.2 percent while in females are 41.8 percent [19]. In another study by Manimaran et al., [19, 20]. Kennedy’s Class III is the most common class of partial edentulousness, 54 percent, which is more predominant in males which percent. According to a study conducted by Madhan Kumar et al., [24] the results showed the patients’ with Kennedy’s Class III were found to be the most prevalent among all the groups which was fifty five percent. Kennedy’s Class III dental arch was the most prevalent pattern in both maxillary and mandibular arches in a study conducted by Fayad et al., [14]. Small sample size and single centered study were the limitations in this study. Another limita-

Table 1. Representing Chi square test for independence between Partial edentulism and Gender. Chi square value of the test statistic is 8.445 with corresponding p value of 0.038 (<0.05). Hence there is a statistically significant difference between gender and partial edentulism among the study population.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.445	3	0.038
Likelihood Ratio	8.836	3	0.032
Linear-by-Linear Association	0.962	1	0.327
No. of Valid Cases	400		

Figure 1: Bar graph representing percentage of partially edentulous participants based on Gender distribution. X axis represents the gender, Y axis represents the percentage of participants. 55% of partially edentulous participants were males (Grey). 45% of partially edentulous participants were females(White). Males seem to have higher prevalence of partial edentulism when compared to females in the study group.

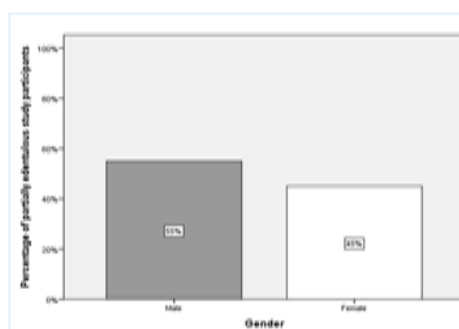


Figure 2: Bar graph representing distribution of partially edentulous study participants based on Kennedy's classification. X axis represents Kennedy's classification and Y axis represents the percentage of partially edentulous study participants. Majority of the study population represented Kennedy's class III classification (63.5%).

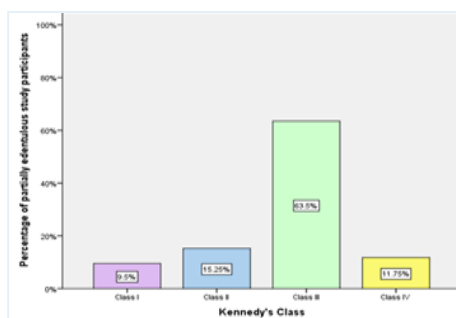
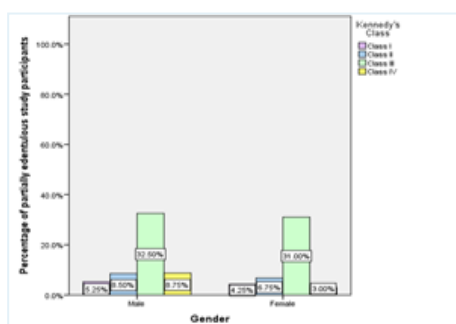


Figure 3: is a Clustered Bar graph representing the association between partial edentulism and Gender. X axis represents Gender and Y axis represents percentage of partially edentulous based on Kennedy's classification. Majority of the study population represented Kennedy's class III in male (32.50%) and female (31%) population. A Chi square analysis was performed to check for association between Partial edentulism and gender. Chi square value 8.445, p value of 0.038 (<0.05). Hence there is statistically significant difference between Gender and partial edentulism among the study population.



tion in this study is there is no variation in ethnicity. Future scope, the future study can be done in a larger population. Our institution is passionate about high quality evidence based research and has excelled in various fields [28, 32, 47, 13, 31, 40, 46, 8, 26, 33, 36]. We hope this study adds to this rich legacy.

Conclusion

Within the limitations of this study, the most prevalent type of partial edentulism is Kennedy's Class III partial edentulism more common in males than females in the current study population. There is a statistically significant difference between gender and partial edentulism among the study population.

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