THE INCIDENCE OF PARTIAL EDENTULISM IN PATIENTS REPORTING TO ISLAMIC INTERNATIONAL DENTAL COLLEGE, ISLAMABAD

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ABSTRACT

Objective: The purpose of this study was to determine the incidence of various partial edentulism cases among a selected population sample. **Study Design:** A cross sectional (observational study) **Setting:** Department of Prosthodontics. **Period:** 15th Jan 2020 to 15th July 2020. **Material and Method:** A total of 200 patients of both genders were selected using non-probability purposive sampling. Demographic data was recorded, and intra-oral examination was done after getting informed consent from patients. Kennedy's Classification was used to determine the category of the modification area, for Kennedy's partially edentulous cases. Partially edentulous patients were categorized with respect to age and gender. **Results:** Out of 200 patients, majority were males(n= 122; 56.0%).Age group 41 to 50 years had maximum number of partially edentulous patients (males 23; 26.1%, females 33; 29.5%). Class III partially edentulous pattern was higher in frequency of examined cases in both arches (mandibular 83; 41.5%. maxilla 81; 40.5%) whereas least frequent was class IV (mandible16; 8.0, maxillary 24; 12.0%). **Conclusion:** Kennedy's Class III was the most frequently examined partially edentulous in mandible and maxilla, while class IV are the least. Posterior modifications are more frequent than anterior in both arches. Requirement of Prosthodontic treatment in females is higher than males and it increases with age.

Key Words: Apple Gate; partial edentulism; Kennedy's Classification; Dentate, Age correlation, Gender correlation, Tooth loss, partial dentures.

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INTRODUCTION

Oral hygiene has been an important impact on a person's general health as well as oral health along with quality of life, but unfortunately it has been one of the most neglected aspects in our society.[1] Poor oral health can result in to several outcomes and partial edentulism can be considered as one of them.[2] The term partial edentulism is used when there is a gap in a dental arch normally occupied by one or more teeth.[3] Partial edentulism has enormous effect on biologic well being of a person.[4] Tooth loss has a great influence on social and psychological levels of an individual personality.[4]

Documenting and recording the pattern of tooth loss is important. It helps in pointing out the prosthetic care requirement of the community.[5] It further assists in planning the education that should be given and therefore design preventive strategies required in the society.[6] The primary function of the classification is to have an easy way of communication among dental students, professionals and dental technicians.[7] Various

classification of partially edentulous arches are documented to find out possible combinations of teeth to ridges.[8]

At present the Kennedy's Classification is the most widely accepted one. Kennedy's Classification is simple, easy to apply and offers quick evaluation and assessment of partial denture design features and recognition of prosthetic support.[9] In this classification area other than the one determining the class is termed as modification area.[10,11] Modification areas in this classification besides simplifying the problem also makes it widely accepted.[10] We classify to make a good treatment plan and partial denture design according to occlusal load expected.[11] It allows trends of incidence of different partial denture classes, and serves as teaching guidelines.[12]

For future health care planning, the epidemiological information on health care and its related concerns are important.[13] It is important to monitor the partial edentulism cases as it indicates the health of people and satisfactoriness of oral health care system.[14] There is less information in literature about properly documented diagnostic criteria for partial edentulism.[5]

The aim of the current study was to determine the incidence of pattern and frequency of Kennedy's Classification among partially edentulous patients attending the Prosthodontics department of Lahore Medical & Dental College Lahore. This would help oral health planners for making strategies that will help in development of dental health care management in our region. It will further help in establishing the data base for cases of partial edentulism among Pakistani population.

MATERIAL AND METHOD
This is a cross sectional study was conducted at the Department of Prosthodontics of Islamic International Dental, College. Two researchers collected patient's demographic data (age and gender) and clinical examination was done with the mouth mirror. Data was collected in the period of six months from 15th Jan 2020 to 15th July 2020. The sample size was 200, based on incidence of partial edentulism form previous studies. Informed verbal consent was taken and ethically approved from institutional ethical committee.

Non-probability purposive sampling technique was used.We selected 200 patients of both gender, within age group 20 to 70 years, with at least 1 missing tooth in both arches. Patients with all missing teeth and unwilling participants were excluded. Patients with missing 3rd molar/ 2nd molar and not to be replaced (following Apple Gate Rule) were excluded. Kennedy's Classification System was used to determine the pattern of partially edentulous arches. Selected patients were grouped into 5 age groups.

Group 1(20-30), Group 2(31-40), Group 3(41-50), Group 4(51-60), Group 5(61-70).Categorizations of modification area for Kennedy's Removable Partial Modification areas were divided in to 3 **categories:**
1) Anterior modification,
2) Posterior modification,
3) Combination
Data collection was done by experienced doctors and was registered in examination proformas.
Data Analysis:
Data was analyzed by using SPSS Version 20.

RESULTS
A total of 200 patients (female 88;44.0%, male 112; 56.0%) with partially edentulous maxillary and mandibular arches were selected. The age ranged from 20-70 years, mean age 48.47 SD ± 12.93.The percentages and distribution of partially edentulous arches according to Kennedy's classification are shown in table I and table II. Class III partially edentulous class was most common in both arches, mandible(n=83;41.5%)

maxilla (n=81;40.5%). However, Kennedy's class IV were the least frequent cases in both arches (mandible 16;8.0%, maxilla 24;12.0%). Thearches without modification areas, the mandibular class III were the most commonly observed cases(31; 15.5%) while class I were the least frequent (14;7.0%) Table I&II. For the modification areas of each class I,II and III, modification 1 had the higher percentage (Table I& II), however mod 3 was least. Likewise Posterior modification areas were more frequently observed in all the examined cases in both arches, followed by anterior modification areas. table III. The least observed were the anterior and posterior modification areas combination.

Table 1. Distribution and percentage of partially edentulous arches by Kennedy's classification class I &II, (n=200)

Arch	CL.I Total	CL.I Without Modification	CL.I Mod.1	CL.I Mod.2	CL.I Mod.3
Mandible	45	14	17	14	0
%	22.5%	7.0%	8.5%	7.0%	0.0%
Maxilla	36	16	12	6	2
%	18.0%	8.0%	6.0%	3.0%	1.0%
Arch	CL.II Total	CL.II Without Modification	CL.II Mod.1	CL.II Mod.2	CL.II Mod.3
Mandible	56	28	21	6	1
%	28.0%	14.0%	10.5%	3.0%	0.5%
Maxilla	59	13	30	9	7
%	29.5%	6.5%	15.0%	4.5%	3.5%

Table 2. Distribution and percentage of partially edentulous arches by Kennedy's classification class III &IV, (n=200)

Arch	CL.III Total	CL.III Without Modification	CL.III Mod.1	CL.III Mod.2	CL.III Mod.3
Mandible	83	31	43	5	4
%	41.5%	15.5%	21.5%	2.5%	2.0%
Maxilla	81	23	39	13	6
%	40.5%	11.5%	19.5%	6.5%	3.0%
Arch	CL.IV Total				
Mandible	16				
%	8.0%				
Maxilla	24				
%	12.0%				

Table 3. Distribution and percentage of partially edentulous arches by modification areas in Kennedy's classification,(n=200)

Kennedy's Classes	Arch	Anterior Modification areas	Posterior Modification areas	Modification area Combination
ClassI	Mandible	8(4.0)	16(8.0)	7(3.5)
	Maxilla	4(2.0)	12(6.0)	4(2.0)
ClassII	Mandible	5(2.5)	17(8.5)	6(3.0)
	Maxilla	11(5.5)	28(14.0)	7(3.5)
ClassIII	Mandible	18(9.0)	26(13.0)	8(4.0)
	Maxilla	12(6.0)	39(19.5)	7(3.5)

DISCUSSION

The classification of partially edentulous arches tells us about the various combinations of teeth and ridges. Kennedy's classification was selected as it not only immediately gives us an idea about the types of arches but also provides a rational perspective to explain the difficulties of the denture designs.15 The high frequency of partially edentulous cases was reported in class III in both mandible(83;41.5%) and maxilla(81;40.5%) and least examined cases were of class IV,(mandible16;8.0%, maxilla 24;12.0%).These findings are close to the finding of Lone MA 3 et al where class III is maximum in frequency(mandible 64%, maxilla 67.2%).Similar findings were found in a study done on patientsvisiting Nepal Medical college Khatmandu (maxilla 135;31%, mandible 91;30%).16 Likewise Khaple17 et al reported class III to be the most frequently examined class in both arches(maxillary 59%,mandible 61%) and class IVbeing the least prevalent class (mandible 5%, maxilla 9%).A studycarried out in Pakistan reported classIII as the most prevalent class (maxilla 54%, mandible 53%) whereas class IV the least in both arches.(maxilla1%, mandible 6%) which is parallel with the present study.[18]

The results of current study showed higher incidence for posterior modification areas in both the arches in all the Kennedy's classes which is due to increase loss of posterior teeth. Patients prefer extractions of posterior teeth more, rather having a restorative treatment due to poverty and lack of knowledge and restore anterior teeth due

to aesthetics.

In both arches majority of all classes of Kennedy's were with no modifications. This is in agreement with Araby YA[19] where majority of class III are without modification (maxilla 56, mandible 52). Whereas in contrast this finding contradicts with the study conducted in Nepal Medical College and Teaching Hospital, where modification I was more prevalent.[20]

The limitation of the present study includes non-probability sampling, size of the sample limits this study and additional studies are recommended.

CONCLUSION
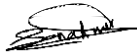
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2	Muhammad Aamir Ghafoor Chaudhary	Discussion	
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