Partial Edentulousness and Treatment Options Chosen

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Abstract: *Background*: Purpose of this study was descriptive analysis of partial edentulousness, treatment options chosen, and treating clinics.

Materials and Method: This study is a part of the cross-sectional descriptive study conducted from April 2017 to September 2017 in the Department of Prosthodontics, B.P Koirala Institute of Health Sciences for which ethical clearance was taken from the Institutional Review Committee (IRC).Purposive sampling was done and written informed consent taken. Clinical assessment of each patient was done and noted down on the preformed proforma. Collected data were entered in Microsoft excel 2013 and statistical analysis done by SPSS 20 version.

Results: Among the total patients, 11 (3.35%) were from high economic group, 251 (76.52%) from medium economic group, and 66 (20.12%) from low economic group. Frequencies of Kennedy's classes in upper arch were class I (n=21), class II (n=38), class III (n=169), class IV (n=23) and in lower arch class I (n=29), class II (n=19), class III (n=130), class IV (n=15). Majority of the patients in medium economic class had chosen fixed prosthesis whereas those in low economic class had chosen temporary removable partial denture (RPD).

Conclusions: The most commonly found Kennedy's class in both the arches is Class III, somewhat more frequently found in upper arch than lower arch. Most commonly chosen treatment option is fixed partial denture (FPD) and least chosen is Cast Partial Denture (CPD). Economic status does affect choice of the treatment options. Temporary RPDs are preferentially placed by undergraduate clinic, FPDs by Specialist clinic and implant-supported by Post-graduate Clinic.

Keywords: Fixed prosthesis, kennedy's class III, partial edentulism, removable partial denture.

INTRODUCTION

Partial Edentulousness is the most common condition among the patients visiting Prosthodontic clinic [1]. A shift from complete edentulism toward partial edentulism is being noticed and the proportion of partially edentulous patients is expected to increase further [2]. Thus, more and more patients will require replacement of missing teeth and it becomes necessary to know their choice of treatment modality because a sequential treatment plan worked out in harmony with the patient's perceptions is needed for the long-term success of the treatment as it is not always easy for the clinicians to make decisions weather to replace missing teeth, to retain or extract periodontally compromised potential abutment teeth or to prescribe a specific occlusal scheme to the patient [3].Current treatment options for partially edentulous patients include RPD, FPD and implants. RPD is widely used in clinical practice because of its advantages like it overcomes financial limitations, facilitates hygiene access, overcomes biomechanical and pragmatic issues associated with dental implants etc. [2, 4]. A review on treatment options for the Kennedy Class I and II partially edentulous patient found that RPDs were indicated in Kennedy Class I cases when there was need for a simple and economic solution and a fixed partial denture supported by means of osseointegrated implants were the optimal solution in Kennedy Class II cases when the bone conditions were appropriate [5].

Though studies have been done to evaluate the prevalence of Kennedy Classes, no research has investigated the frequency of choosing different prosthetic treatment options in this region to the author's knowledge. Therefore, the aim of this study was descriptive analysis of partial edentulousness, the treatment options chosen, and the treating clinics i.e., undergraduate or postgraduate or specialist clinic.

MATERIALS AND METHOD

This study is a part of the cross-sectional descriptive study conducted from April 2017 to September 2017 in the Department of Prosthodontics, B.P Koirala Institute of Health Sciences for which ethical clearance was taken from the IRC [6]. Purposive sampling was done and written informed consent was taken from each patient for participation in the study. Clinical assessment of each patient was done and noted down on the preformed proforma. This included history taking, extra-oral and intra-oral examinations, radiographs, diagnostic casts and treatment planning according to the standards of Prosthodontics followed in the clinic. Economic status of a patient was noted

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Table 1: Demographic Structure of the Population

Characteristics	Frequency (%)
Age	
Minimum=15	-
Maximum=75	-
Mean ± SD=45.51±14.668	-
Sex	
Male	121 (36.9%)
Female	207 (63.1%)
Economic-status	
High	11 (3.35%)
Medium	251 (76.52%)
Low	66 (20.12%)
Total	328 (100%)

down during history taking; Kennedy classes were noted down during intra-oral examinations and treatment option chosen was noted down after treatment planning. Collected data were entered in Microsoft excel 2013 and statistical analysis was done by SPSS 20 version.

RESULTS

The total number of participants included, age and sex have already been presented in previous publications [6, 7], and also shown in the table below for clarity and completeness (Table **1**). Economic-status of the participants (Table **1**), distribution of Kennedy's classes in different arches (Table **2**), treatment options chosen by different economic groups (Table **3**) and the treating clinics (Table **4**) have been presented below. Majority of the patients were of medium economic class (Table **1**). The most commonly found Kennedy's class in both the arches was Class III, somewhat more frequently found in upper arch than lower arch (Table **2**). Majority of the patients in medium economic class had chosen fixed prosthesis whereas those in low economic class had chosen temporary RPD (Table **3**). Only 5 patients were prescribed CPD. Temporary RPDs were mostly allocated to undergraduate clinic, FPDs to Specialist clinic and implant-supported to Post-graduate Clinic (Table **4**).

DISCUSSION

There was a need to conduct this study as there is insufficient literature discussing the treatment options chosen for one of the major conditions which brings patients to the Prosthodontic Clinic. The finding of this study that the most common Kennedy's class in both the arches is Class III and is more frequently found in upper arch than lower arch is consistent with other similar studies [1, 8-11]. Another finding that the most

Table 2: Distribution of Kennedys Classes in Different Arches

Kennedy's Classes	Upper arch (n)	Lower arch (n)	Total (N)
Class I	21	29	50
Class II	38	19	57
Class III	169	130	299
Class IV	23	15	38

Table 3: Treatment Options Chosen by Different Economic Groups

Treatment options	High Economic Group n (%)	Medium Economic Group n (%)	Low Economic Group n (%)	Total N (%)
Temporary RPD	2 (18.18)	32 (12.74)	43 (65.15)	77 (23.47)
CPD	1 (9.09)	4 (1.59)	-	5 (1.52)
FPD	5 (45.45)	99 (39.44)	18 (27.27)	122 (37.19)
Implant Supported	3 (27.27)	84 (33.46)	-	87 (26.52)
Full mouth rehabilitation	-	5 (1.99)	-	5 (1.52)
Temporary RPD+FPD	-	27(10.75)	5(7.57)	32 (9.75)
Total	11 (3.35)	251 (76.52)	66 (20.12)	328 (100)

Here; n=number of patients.

Table 4: Treatment Allocated to Different Clinics

Treatment options	Undergraduate Clinic n(%)	Post-graduate clinic n(%)	Specialist clinic n(%)	Total N(%)
Temporary RPD	59 (100)	15(9.61)	3(2.65)	77(23.47)
CPD	-	5(3.20)	-	5(1.52)
FPD	-	46(29.48)	76(67.25)	122(37.19)
Implant Supported	-	53(33.97)	34(30.08)	87(26.52)
Full mouth rehabilitation	-	5(3.20)	-	5(1.52)
Temporary RPD+FPD	-	32(20.51)	-	32(9.75)
Total	59(17.98)	156(47.56)	113(34.45)	328(100)

commonly chosen treatment option is FPD is also consistent with the results of some previous studies [8, 9, 11]. As the majority of patients in medium economic class had chosen fixed prosthesis and those in low economic class had chosen temporary RPD, indicates that economic-status does affect the choice of treatment modality. When more than one treatment option is possible in a case, the definitive replacement depends largely on patient's decision/financial status [12]. Temporary RPDs were mostly allocated to undergraduate clinic, FPDs to Specialist clinic and implant-supported to Post-graduate Clinic which shows that the level of competence plus the need of the students does affect the choice of treatment option.

One similar study found RPDs to be the highest placed prosthesis which was mostly placed by students and the study concluded that though RPD continues to be a commonly chosen prosthetic teeth replacement, the use of dental implants shows a steady increase every year bringing a change in prosthetic rehabilitation trends and is affected by students' requirements and level of experience, and patient's age [13]. In the present study, greater number of patients were prescribed implant supported prosthesis than RPDs and those implants were generally placed by Post-graduate students.

In the present study, only 5 patients were prescribed CPD. The use of CPDs has decreased and its importance has declined in the teaching curriculum [14].

One of the limitations of this study is that after allocating patients to different clinics, follow-up was not done to know whether all the patients undertook the prescribed treatment modality or anyone of them changed the choice in due course of the treatment.

CONCLUSIONS

The most commonly found Kennedy's class in both the arches was Class III, somewhat more frequently found in upper arch than lower arch. Most commonly chosen treatment option is FPD and least commonly chosen is CPD. Majority of the patients in medium economic class had chosen fixed prosthesis whereas those in low economic class had chosen temporary RPD. Temporary RPDs were mostly placed by undergraduate clinic, FPDs by Specialist clinic and implant-supported by Undergraduate Clinic.

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