



Evaluation of possible reasons for not opting for fixed dental prosthesis: Patient and Practitioner Perspective

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ABSTRACT

With recent trends towards oral hygiene practices, the need for prosthetic rehabilitation has increased. There has been an increased spread of knowledge regarding the same as well as an increase in treatment options for the same. Epidemiological studies have shown that the anterior mandibular teeth usually are retained for the longest period, and the canines are the most persistent. Prosthetic rehabilitation of extracted teeth is important, and the choice of appropriate prosthesis is even more critical. There has been an increasing trend in the usage of removable options. The study aims to assess the different reasons to opt for a removable prosthesis than a fixed prosthesis. Retrospective data of 186 patients were obtained and segregated. Inclusion criteria included that they should be between 18 – 40 years, undergone removable denture therapy and should have visited during the period of the study. The data were tabulated, and the same was analyzed using SPSS by IBM version 20. The frequencies and cross-tabulations were performed, followed by correlation and association using the chi square test to check the correlation between the different variables. The results, thus obtained, were analyzed. Males (54.8%) undergo removable therapy more than females. Most common arch is upper arch (59.1%), the most common reason is to use a temporary denture (37.6%) Correlation seen between Arch and reason for not opting for FPD ($p < 0.05$). The present study has revealed a lacuna in knowledge among patients and practitioners—further studies and programmes to be done to improve knowledge and help society.



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INTRODUCTION

With recent trends towards oral hygiene practices, the need for prosthetic rehabilitation has increased. There has been an increased spread of knowledge regarding the same as well as an increase in treatment options for the same. Epidemiological studies have shown that the anterior mandibular teeth usually are retained for the longest period of time, and the canines are the most persistent. It has been shown that a dentition of the anterior teeth and one and two premolars is present in 20% to

30% of elderly patients (Eichner and Blume, 1987). Thus, treatment for them with a complete maxillary denture and a mandibular removable denture is a standard prosthodontic procedure. However, before concluding clinically on the treatment option, all aspects are to be considered (Selvan and Ganapathy, 2016).

Recently, it was shown, however, that treatment with simple cantilever fixed partial denture (FPD's) as an alternative to removable prosthesis in these patients. Subjective improvement of chewing function was observed in patients who previously had successfully worn removable prosthesis, but the periodontal status of the same is important. Data has indicated through the years that both FPD's and the removable denture may influence oral hygiene and mobility of the abutment teeth. Thus, the turn can play a role in the development and progression of carious lesions and other periodontal diseases, these two being the most common dental diseases in Indian population. It has also been demonstrated that with proper oral hygiene, minimal periodontal changes occur adjacent to the abutment teeth that support the fixed or removable dental prosthesis (Ganapathy *et al.*, 2016; Rissin *et al.*, 1985).

Prosthodontic, functional and periodontal conditions during two years of supervised oral hygiene in patients treated with either removable prosthesis or distally extending cantilever fixed partial denture was reported in previous studies. It was found that signs and symptoms of mandibular dysfunction were less pronounced in the group of patients treated with fixed restorations. Furthermore, higher plaque scores and more caries were observed in the removable prosthesis group than fixed prosthesis groups (Budtz-Jørgensen and Isidor, 1990). Thus, the superiority of the modality is very evident, but for reasons for not opting for that need to be assessed. The present study aimed to evaluate the prevalence of different reasons for a patient to undergo removable prosthetic treatment than fixed prosthetic treatment.

MATERIALS AND METHODS

The present retrospective study was conducted among 186 patients who reported to Saveetha Dental College and underwent temporary partial denture treatment rather than fixed partial denture therapy. The study was performed in a University setting (Saveetha Dental College and Hospitals, Chennai, India); thus, the data available is of patients from the same geographic location and have similar ethnicity. The ethical approval of the retrospective data that was collected from the archives of

the Department of Prosthodontics, Saveetha Dental College was obtained from the Institutional Ethics Board.

The data was collected and studied for the period from June 2019 to April 2020. Once the data was obtained, the same was verified with the help of photographs by two external reviewers to limit and restrict any aspect of bias towards the present study. The reason for not opting for FPD was then tabulated. A well-defined elaborate inclusion criterion was laid out before the commencement of the present retrospective study.

The inclusion criteria that were constructed included the following, and the patient should be 18-40 years old, he patient should have visited the operator during the period of the study and been treated by a resident of Saveetha Dental College and should have undergone TPD treatment than FPD.

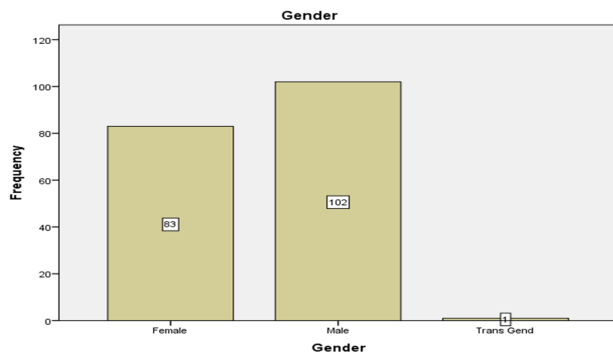
On segregation of all available samples, all non-specific data entries such as double entries and other types of censored data were excluded from the present study. Thus, the obtained master data sheet was reviewed by another external reviewer.

The data were tabulated, and the same was analyzed using SPSS by IBM version 20. The frequencies and cross-tabulations were performed, followed by correlation and association using chi square test to check the correlation between the different variables. The results, thus obtained, were analyzed.

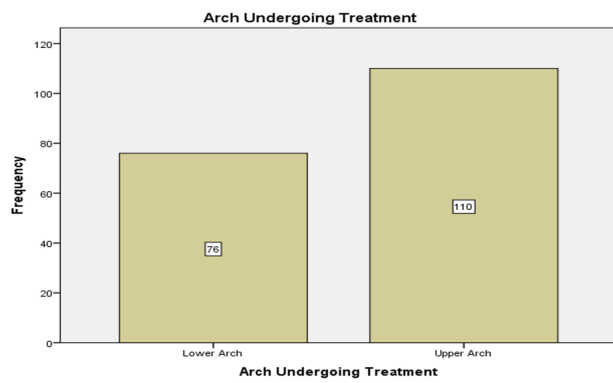
RESULTS AND DISCUSSION

A total of 186 patients were included as part of the present study out of which 102 patients were males (54.8%), 83 patients were females (44.6%), and one patient was a transgender (0.5%) (Graph 1). Out of the entire group of retrospective patients, 95.2% were treated by undergraduates, whereas 4.8% were treated by postgraduates. The upper arch was more common (59.1%) to undergo treatment than the lower arch (40.9%) (Graph 2). The most common reason that the patient opted for a temporary partial denture than a fixed partial was that it was being used as a temporary denture (37.6%) (Graph 3), and the most common reason after that was the patient could not afford the same (22.6%). Because of the practitioner, the most common reason was multiple edentulous spaces (22%). The issue of edentulous spaces was present most commonly in the 30-40 years patients age group. There was a statistically positive correlation that was obtained between the arch undergoing treatment and the reason for not opting for FPD ($p < 0.05$) (Graph 4).

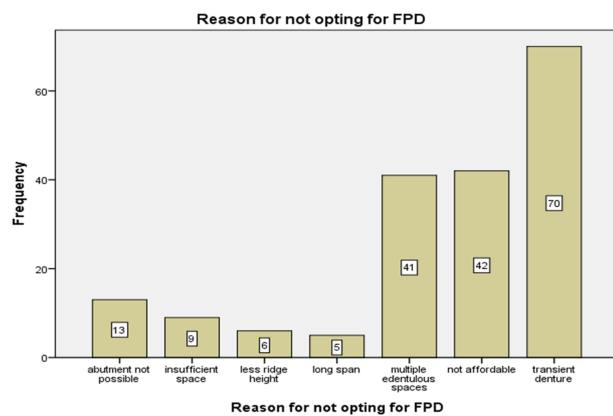
To the American Boards of Prosthodontist, a fixed



Graph 1: Bar Graph shows Distribution of gender in patients under going removable denture therapy



Graph 2: Bar Graph shows the Distribution of Dental Arches in patients under going removable denture therapy



Graph 3: Bar Graph shows the distribution of various reasons for the patient to resort to removable prosthesis than a fixed prosthesis

partial denture is a partial denture that is cemented to natural tooth or roots which furnish the primary support to the prosthesis. Patient care should always be the epicentre of a dental practice. De Van said the following, "meet the mind of the patient before meeting the mouth of the patient" (House,

1958). Thus, it is very important to know the reasons why the patient isn't opting for a fixed prosthesis (Kinane and Chestnutt, 2000). This is a first of its kind study, as the prevalence of the different reasons has not been assessed so far.

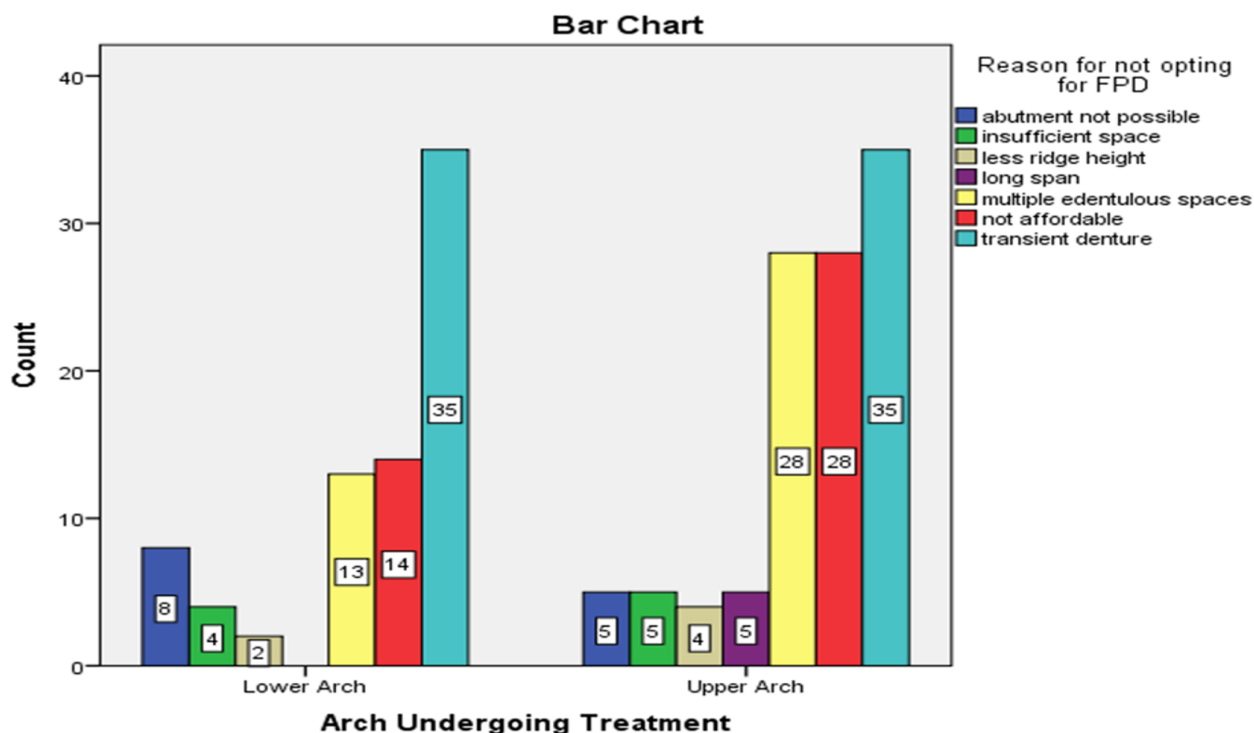
Graph 1, With gender in the x-axis and number of patients in the y-axis. Males are seen at a higher rate of 102 (54.83%) than females, 83 (44.62%) and transgender person 1 (0.53%)

Graph 2, Upper Arch is seen at a higher rate of 110 (59.13%) to undergo removable denture therapy than the lower arch 76 (40.87%)

In the present study, it is observed that males undergo removable prosthetic treatment more than females. It is observed that there is an increased prevalence of smoking in the male gender than the female gender as reported by (Bhawna, 2013) at a national level tobacco survey. It has been reported time and again that there is a clear relationship between smoking and the destruction of periodontal health. This could be a possible reason as to why the male population end up with a removable prosthesis rather than a fixed one as it would not give the ideal results. In the present study, it is observed that the upper arch undergoes more removable prosthetic therapy than the lower arch. This was not anticipated during the study, because the age group of the population being studied is of 18-40 years which is known to have high aesthetic concerns (der Geld et al., 2008).

However, the results can be reasoned logically that most of the prosthesis did not lie in an aesthetic zone and hence would not cause concerns to the patient. The reasons that were assessed as to why the patient did not go for fixed dental prosthesis were, the abutment was not viable, insufficient space, inadequate ridge height, long span, multiple edentulous spaces, temporary denture to be replaced by a fixed prosthesis in the future, non-patient affordability. Out of these reasons for a patient to opt for the option, is to use the removable prosthesis as a temporary denture. Temporary dentures can be used as a method to prevent and control bone lysis as reported by (Kouadio et al., 2015). In a younger population as taken in the present study, it is highly possible for the patients to prefer dental implants due to their high success rates with various recent practices (Gupta et al., 2010). Thus, until there is a possibility to place an implant, the denture can be used to prevent the drifting of adjacent teeth and also to preserve the amount of bone that is present.

When the patient's perspective is being considered, the following common reason is non-affordability. This should not be viewed as a problem of the



Graph 4: Bar Graph shows the association between the dental arch and various reasons for the patient to resort to removable Prosthesis than fixed Prosthesis

patient, rather as a problem of the dental fraternity as we are not able to serve the entirety of the population. This paves the way for the development of new materials for the reason of fixed dental prosthesis. However, in these cases, the patients can be advised with a provisional fixed partial denture (Federick, 1975) with materials like polymethylmethacrylate which would not deteriorate the periodontal health of the patient. The survival rate would not be great (Zuccari *et al.*, 1997), but the patient will be able to afford a ceramic prosthesis by then. This also shows a lacuna in the knowledge among practitioners regarding the same.

The following common reason given the practitioner is multiple edentulous spaces. This can be attributed to the insufficient skill of the practitioner. Thus further courses and programs are to be conducted to address the same. The limitations of the present study include that it is a single centre; the population is geographically isolated and ethnically similar. Further studies are to be carried out in a multicentered fashion, including practitioners as well.

CONCLUSION

With the limits of the present study, it was observed that the most common reason to opt for a removable prosthesis than a fixed prosthesis. was to use

as a temporary denture. However, the study has revealed a lacuna in the skill and knowledge of practitioners. Further courses and programs are to be conducted to help society have better oral health.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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