



Influence of Gender in Selecting Fixed and Removable Prosthesis

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ABSTRACT

Tooth loss is a common dental problem. Impairment of oral functions and masticatory efficiency is a result of tooth loss. The negative effects of tooth loss can be managed by the fixed and removable prosthesis. This study was conducted to determine the influence of gender in selecting prosthesis. This study was a retrospective observational study conducted in a university hospital in Chennai. Data collection was done with the help of the electronic dental record of the university- Dental information archiving software (DIAS). It records all patients data from initial visit to last visit chronologically. This was followed by Excel tabulation. Data was analysed using SPSS Software. The association of study variables was calculated using the Chi-Square test. Within the limits of the study, female patients were willing for replacement of teeth than male patients (55%). There was a significant difference in choosing the type of prosthetic treatment. It was seen that fixed partial denture was chosen over removable prosthesis (59.8%).



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INTRODUCTION

Teeth play a vital role in the overall wellness of an individual. After dental caries and periodontal diseases, edentulism (either partial or complete) is considered as the third most commonest cause for which patients visit a dentist (Emami *et al.*, 2013; Jain *et al.*, 2019). Tooth loss is a hindrance to

perform essential oral functions such as communication, mastication and smiling (Xie *et al.*, 2015; Jyothi *et al.*, 2017). It also affects the appearance of a person, especially when it involves the anterior teeth (Esan *et al.*, 2004; Harrison, 1991; Duraisamy *et al.*, 2019). Tooth loss not only affects the body physiology but also disturbs the psychology of the individual (Ganapathy *et al.*, 2016; Subasree *et al.*, 2016). Thereby it affects oral as well as general health with a substantial impact on quality of life. Edentulism (partial or complete) has been described as an irreversible and debilitating condition (Behr *et al.*, 2014; Selvan and Ganapathy, 2016).

The negative effects of tooth loss can be managed by removable or fixed prosthesis. A removable prosthesis can be either partial or complete dentures (Jain *et al.*, 2017). Fixed prosthesis can be bridges or implants. The choice of prosthesis is determined by patient's choice, the age, gender, economic status of the patient, available technology and the number of missing teeth (Vijayalakshmi

and Ganapathy, 2016; Kannan, 2017). The choice of treatment can also be influenced by factors like patient choice, age, gender, socio-economic status of the patient. Factors like concerns about damaging the neighbouring teeth, pain, post-operative sensitivity, dental phobia, available technology and number of missing teeth can also determine the choice of treatment (Al-Quran et al., 2011; Ashok and Suvitha, 2016).

When a few teeth are absent, it is generally managed with fixed dentures (FDs), while the consideration for removable partial dentures (RPDs) increases with the number of teeth to be replaced. In addition, removable dentures may be a more appropriate option if it provides the most cost-effective form of treatment (Ashok et al., 2014). A higher frequency of removable dentures is present in older age groups, in people living in rural areas, and in those from a lower socio-economic status (Zitzmann et al., 2007; Venugopalan et al., 2014). The removable dentures however, have the disadvantage of having to be removed every night before going to bed to allow the underlying supporting tissue to rest (de Castellucci Barbosa et al., 2008; Kannan and Venugopalan, 2018). Complete denture (CD) is the most common form of prosthetic rehabilitation for edentulism. In contrast to a partial denture, a complete denture is constructed when there are no more teeth left in an arch, it is an exclusively tissue-supported prosthesis.

Management of few missing teeth with tooth supported dentures is a solution in patients who preferred fixed restoration and cannot afford more expensive implant-supported prostheses (Budtz-Jørgensen, 1996; Basha et al., 2018; Ajay et al., 2017). However, this has the disadvantage of tampering with sound tooth structure.

There are different studies conducted on demographic factors associated with selecting fixed and removable prosthesis. However, there is a lack of data on the influence of gender in selecting dental prosthesis. Therefore this study was designed to evaluate the gender influence on selecting removable and fixed prosthesis.

MATERIALS AND METHODS

This study was a retrospective observational study conducted in a university hospital located in South India. The study was conducted with the approval of the Institutional Ethics Committee [SDC/ SIHEC/ 2020/ DIASDATA/ 0619-0320]. All case sheets between June 2019- March 2020 were reviewed.

Data collection was done with the help of review-

ing 86000 patient records. Incomplete records were excluded from the study. Randomization was done in order to minimise the sampling bias. Patients who have undergone fixed and removable prosthesis were noted. Cases were cross verified by another examiner.

This was followed by Excel tabulation. Data analysis was done using SPSS Software. The association between study variables was calculated using chi-square test, where $P < 0.05$ was considered statistically significant (Yemm, 1985).

RESULTS AND DISCUSSION

The need for dental prosthesis was most commonly seen in the age group between 29-38 years (21.2%) and followed by the age group between 49-58 years (19.2%). The age group between 39-48 years also had an almost equal need for prosthesis. The correlation between age and type of prosthesis gave a chi-square value $P = 0.000$, which is statistically significant (Figure 1). The age distribution of our study when compared to previous studies gives a similar result. Yunus et al. has stated the younger age group were willing for fixed and removable prosthesis than older age groups 87% (Yunus et al., 2001). Joan et al. also stated that the age below 50 years were in need of prosthesis than the older age group (Enabulele and Omo, 2018). This may be due to the awareness among younger age groups about the importance of replacement of missing teeth. This also could be influenced by factors like aesthetics and speech, which may have an impact on self-esteem.

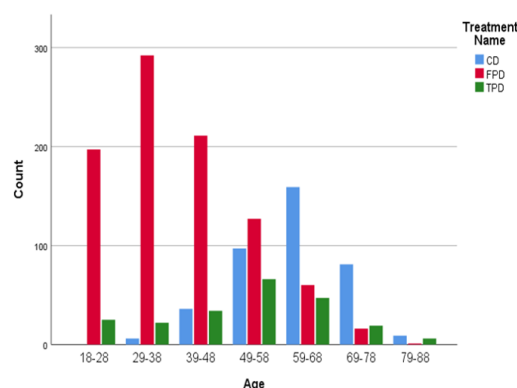


Figure 1: The graph represents the correlation of age and type of prosthesis

The gender distribution reveals that females selected both fixed and removable prosthesis than men (55%). The correlation between gender and prosthesis was analysed by chi-square test $P = .450$ (statistically not significant) (Figure 2), where X-axis denotes gender and Y-axis denotes the type

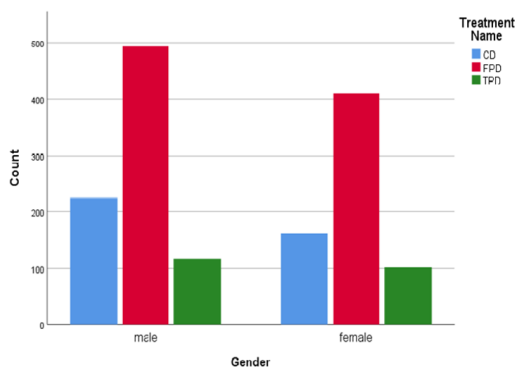


Figure 2: The graph represents the correlation of gender and type of prosthesis

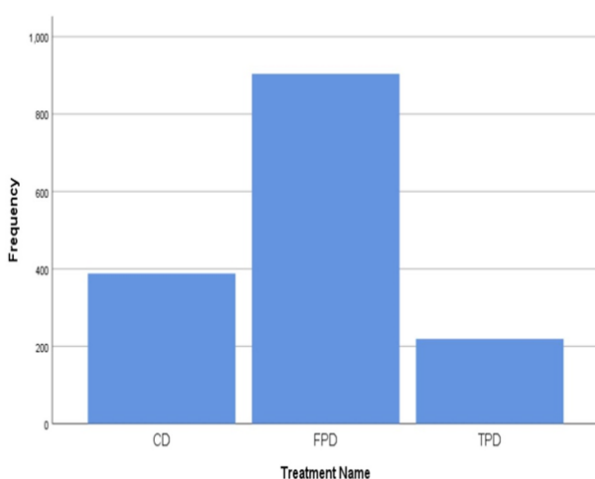


Figure 3: The graph represents Distribution of treatment for the management of missing teeth

of prosthesis.

This finding of our study goes in hand with the study of Joan et al. He stated that selecting prosthesis had a female predilection. Nupur et al. also highlighted a female predominance when selecting both fixed and removable prosthesis (Shrirao et al., 2016). The main reason behind this is that females are more concerned about aesthetics than men. Another possible reason is that the level of awareness about the replacement of missing teeth may be higher in females.

Figure 1 shows a blue colour denotes CD, red denotes FPD and green denotes TPD, where X-axis depicts different age groups, and the y-axis depicts the type of prosthesis. Need for dental prosthesis commonly seen in the age group between 29-38 years (21.2%). Followed by the age group between 49-58 years (19.2%). Pearson Chi-square value - 57.730, p-value - 0.000, p value < 0.005, significant Figure 2 shows a blue colour denotes CD, red

denotes FPD and green denotes TPD. Females selected both fixed and removable prosthesis than men (55%). Pearson Chi-square value-1.598, p-value -0.450, p-value >0.05, insignificant

Figure 3 shows the X-axis denotes the type of prosthesis, whereas the Y-axis denotes the number of patients. Fixed prosthesis was more preferred when compared to removable prosthesis 59.8%.

The following graph reveals that fixed prosthesis was more preferred when compared to removable prosthesis 59.8% (Figure 3). The most common prosthesis selected goes in hand with the study of Asif Ulla Khan. He stated that 59% of the patients preferred fixed prosthesis. This may be due to reasons like limited number of missing teeth, easy maintenance and also the durability of fixed prosthesis. However, Damyanov et al, Carlson GE et al stated that the removable prosthesis were more preferred than fixed prosthesis (Damyanov et al., 2013; Carlsson and Omar, 2006). The reasons behind this could be multiple missing teeth and also because the removable prosthesis is more economical when compared to fixed prosthesis. Different geographic location and larger population are also factors associated with this finding.

The limitations of the present study are, it is a single centred study, it does not represent ethnic groups, and patient satisfaction is not recorded. In future, this research can be done on a larger population. Patient satisfaction could also be recorded.

CONCLUSION

Within the limits of the study, it can be concluded that the female patients were willing for replacement of teeth than male patients. There was a significant difference in choosing the type of prosthetic treatment. It was seen that fixed partial dentures were chosen over the removable prosthesis.

Conflict of interest

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

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