



Evaluation of female to male ratio in receiving conventional complete denture prosthesis — a retrospective study

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ABSTRACT

A complete denture is defined as a 'dental prosthesis which replaces entire dentition and associated structures of the maxilla and mandible'. Functions of complete Dentures include restoring aesthetics, mastication, and speech. When all the teeth within a jaw have been lost and need to be prosthetically replaced, and it is an exclusively tissue-supported prosthesis if implants are not indicated. Tooth loss can occur due to many reasons, such as Dental caries, Periodontal disease, Trauma and Congenital disorders. So the aim of the study was to evaluate the ratio between the female and male patients in receiving the complete denture in Saveetha dental college and Hospitals. Data of 423 patients records were analysed and retrieved from total data of 86000 patients who visited between June 2019 and March 2020. The study parameters such as age, gender and patients who received complete denture were recorded and converted into excel sheets for tabulation, and the collected data were entered in SPSS and analysed through Chi-square test. Results from the study revealed that prevalence among the males was 59.8% and among the females was 40.2%; distribution of complete denture among various age groups revealed 85.1% above 50 years and 14.9% below 50 years. The association between the age groups and the frequency of gender revealed Pearson Chi-Square Value-0.005; $p < 0.05$ Hence statistically significant. The study showed that male patients and patients above 50 years were more likely to be delivered with a complete denture. The study revealed the male predominance due to their poor oral hygiene.

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INTRODUCTION

A complete denture is defined as 'a dental prosthesis which replaces the entire dentition and associated structures of the maxilla and mandible'. Complete denture functions are to restore aesthetics, mastication, and speech (Ganapathy *et al.*, 2017). Various treatment outcomes with complete dentures in edentulous patients involve a complex array of different factors (Ganapathy *et al.*, 2016). It varies from patient to patient, and it is important to record the relationship accurately to produce a very comfortable prosthesis (Kumar *et al.*, 2016). The role of dental professionals is to promote oral health and den-

tal esthetics (Ariga et al., 2018). Complete dentures are essential to rehabilitating the stomatognathic system by improving masticatory efficiency, phonetics and aesthetic appearance of the completely edentulous patients (Karlsson, 1983). Complete edentulous condition is a disability as specified by WHO (Ranganathan et al., 2017).

Absolute edentulous patients experience the effects of compromised function, appearance, and they have a diminished nature of life (Emami et al., 2013). A denture can be functional and agreeable with the increase in future over the previous decade, the number of older patients expecting missing teeth has also increased (Singh et al., 2014). Conventional denture is a typical method to reestablish anatomical structures, form, function and esthetics (Shetty et al., 2013).

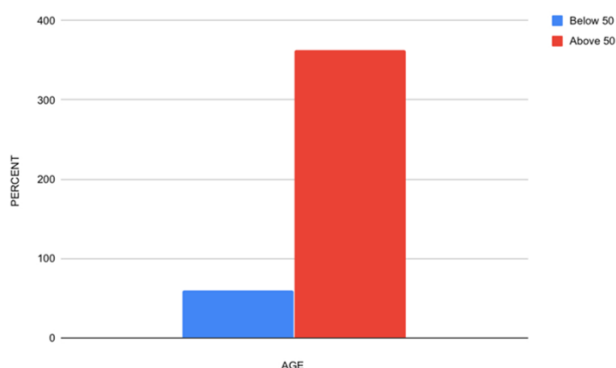


Figure 1: Bar graph showing the distribution of age below 50 years and above 50 years

The fitting of the denture should not be viewed as the phase of treatment. Instead, it should be seen as a long term process as the achievement of the denture depends not only on the clinical and technical procedures completed by the dental specialist but also on how the patients insert their denture (Kalberer et al., 2020). There are two main categories of dentures depending on whether they are used to replacing missing teeth on the mandibular or maxillary arch (Payne et al., 2018).

A conventional appliance is made and placed in a patient’s mouth after the remaining teeth are removed, and tissues have healed, and this process can take several months (Ganapathy et al., 2016). An immediate appliance is inserted as soon as the remaining teeth are removed (Selvan and Ganapathy, 2016; Kannan and Venugopalan, 2018). Absence of all-natural teeth has a negative impact on mastication, speech, esthetics and overall oral health-related quality of life (Devi and Singh, 2014). Current clinical techniques for complete denture prosthesis are the branching technique that allows for extended treatment and management of more

complex patient problems. Recent surveys indicate that improved efficiency in the denture fabrication process is important to most clinicians. (Vijayalakshmi and Ganapathy, 2016).

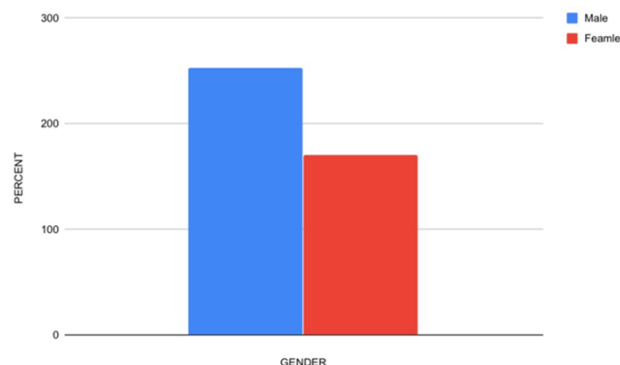


Figure 2: Bar graph showing the distribution of male and female patients

The branching technique, five appointment method and the accelerated technique require attention to detail and the ability to efficiently fulfill the patient expectation (Yen et al., 2015; Duraisamy et al., 2019). Other studies show that male receives complete dentures more than females due to their poor oral hygiene and early loss of teeth (Zarb and Bolender, 2004). A complete removable denture is one of the most common treatment modalities for completely edentulous patients (Jyothi et al., 2017; Ajay et al., 2017).

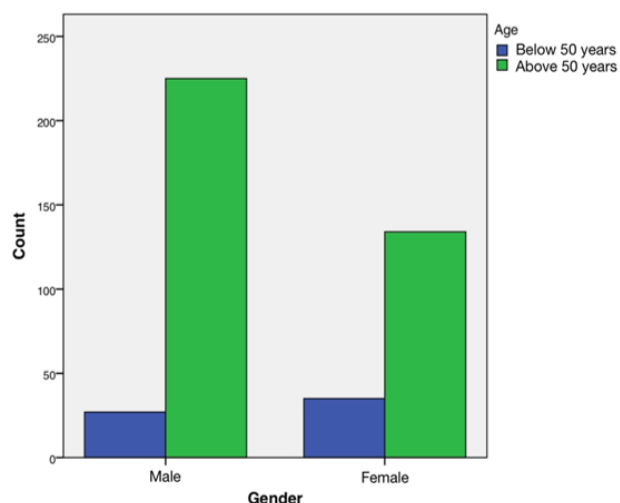


Figure 3: Bar graph depicting the association between Gender and the frequency of Age

Other options are available, such as fixed hybrid prosthesis and implant-retained-over dentures play a major role in prosthetic rehabilitation owing to financial issues, patient compliance (Ashok et al., 2014). Prosthetic rehabilitation is done to regain function, speech and esthetics (Venugopalan et al., 2014; Ashok and Suvitha, 2016). Aloe Vera has also

Table 1: The frequency and distribution of age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
Below 50	60	14.9	14.9	59.8
Above 50	363	85.1	85.1	40.2
Total	423	100.0	100.0	100.0

Patients with below 50 years of age are 14.9%, and the patients with above 50 years age is 85.1%

Table 2: The frequency and distribution of male and female

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	253	59.8	59.8	59.8
Female	170	40.2	49.2	49.2
Total	423	100.0	100.0	100.0

Incidence of Complete denture in male patients is 59.8% and in females is 40.2%

been used in dentistry for its beneficial properties in various conditions like poor maintenance (Subasree et al., 2016). Considering all the above factors, this study aims at evaluating the ratio between the female and male patients in receiving the complete denture delivered in Saveetha Dental College.

MATERIALS AND METHODS

Study Setting

This study was carried out in a university setting which consists of subjects predominantly South Indian population. Advantages of the study include available data, similar ethnicity. Disadvantages of this study are the fact that it is uncentred study and the geographic locations, trends are not assessed. Approval of the study is by the ethical board of Saveetha University.

Sampling

This is a retrospective study in which the samples were considered from the time period of June 2019 to March 2020. Total of 423 cases was retrieved with the study parameters including age, gender and the Case sheets reviewed for the patients with Complete denture and cross-verification of the required samples by reviewing experts done. Measures were taken to minimize sampling bias. These are the inclusion of only clear and readily available data, followed by simple random sampling. Both internal and external validation was also obtained to carry out the study.

Data Collection/Tabulation

The required data, i.e., patients with complete dentures with age and Gender were collected and entered in a methodical manner in an excel sheet for the tabulation of data and further statistical analysis data was validated by 1-2 external reviewers, and

all the non-specific, unclear or incomplete data were excluded from the study.

Analytics

Statistical software used for analysis is the SPSS (Statistical Package for the Social Sciences) which is designed by IBM and the statistical test used were frequency tables along with bar graphs to analyze and compare the obtained results. Chi-square test was used to compare Independent variables include ethnicity, age. Dependent variables include gender, arch involved.

RESULTS AND DISCUSSION

Out of the total sample size 423 cases with result values obtained were, males showed 252%, and females were 169% (Table 1),(Figure 1). X-axis represents the age groups, and Y-axis represents the number of patients.

They were also observed that the increased age of the male population has a higher incidence of tooth loss than the female population (Table 2),(Figure 2). X-axis represents the gender, and Y-axis represents the number.

A study by (Alves et al., 2019) influences of Gender and complete denture wearers also stated that male predilection (Alves et al., 2019). A study by (Baran et al., 2007) socioeconomic status affecting complete denture stated that functional limitation, patient adaptation affects the quality of life which interferes with gender predilection (Baran et al., 2007).

A study by (Marković et al., 1999) Influence of age and number of prosthesis adaptation to a complete denture states that old age is more likely to have tooth loss, so they will go for a complete denture (Marković et al., 1999; Baran et al.,

2007). Hence, more studies with large sample size and different population groups need to be conducted (Ariga *et al.*, 2018). In the present study finding, this was in accordance with similar studies and also with the literature.

There was a significant association between male patients with the age group of above 50 years, and a number of Complete dentures received (Pearson Chi-Square Value-0.005; $p < 0.05$) Hence it was significant (Figure 3). X-axis represents the frequency of Gender and Y-axis represents the number of patients.

It was also reported that males are less concerned about their edentulism, less likely to opt for restorations and less likely to visit a dentist than females (Steele *et al.*, 1996). The present study results were in line with the previous study mentioned above. In a previous study (Peltzer *et al.*, 2014), they found that the functional disability may pose a challenge with carrying out proper oral hygiene practices and with access to receiving dental care, thus predisposing the old aged male people to dental disease and tooth loss. This could be a possible reason why complete denture has been delivered more among males in the present study.

However, there were a few limitations encountered in this study, including a small sample size due to some data that were unclear of certain parameters, were not considered. Another limitation was the geographic limitation, i.e., assessment of predominantly South Indian population further this study was an uncentred study and the sample size collected in a small population. The future scope of this study will include, the assessment of knowledge and association of complete denture with various parameters including socioeconomic, educational, psychological status and also need to evaluate sex differences in denture satisfaction. The higher prevalence of complete edentulism in men, when compared to women, suggests the need for improvement in oral hygiene among men.

CONCLUSION

The present study assessed the association of complete denture with age and gender. The number of male patients with complete dentures was more than the number of female patients; The overall results show a male predilection. This study also revealed that patients above 50 years of age were more prone to receiving the complete denture prosthesis.

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Conflict of Interest

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

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