

MANDIBULAR SINGLE COMPLETE DENTURE INSERTION: A RETROSPECTIVE STUDY

Maajida Aafreen M¹, Ashok V², Deepa Gurunathan³

Abstract

Aim: The aim of the study is to evaluate the number of mandibular single complete dentures given, as a retrospective study of 1 year.

Materials and methods: The data was collected between a time period of June 2019 to March 2020 and included a sample size of 30 participants. The findings were tabulated in excel sheets. The data analysis was done using SPSS software and the output was obtained in the form of pie charts and graphs.

Results: The total number of mandibular single complete dentures given were found to be 75.9%. The most common gender showed Male compared to female and based on the patients age, the most common age included 45 to 50 years of age.

Conclusion: Within the limits of the given study, the mandibular single complete denture given was high and more prevalent in males with an age group of 45 to 50 years of age.

Keywords: Edentulism; single complete denture; prosthesis; rehabilitation; dentition

Introduction

Edentulism is a debilitating and irreversible condition and is described as the final marker of disease burden for oral health [1]. Though the prevalence of complete tooth loss has declined over the last decade, edentulism remains a major disease worldwide, especially among older adults [2]. Edentulism occurs because of biologic disease processes, such as dental caries, periodontal disease, trauma and oral cancer. Dental caries caused by bacteria do not only affect the teeth but also affect the dermis and subcutaneous layer leading to cellulitis and other diseases [3]. Improper dental care can leave you at risk of developing gum disease [4]. Periodontitis can cause mobility, bleeding on probing and eventually if not treated can lead to tooth loss [5]. Edentulism is defined as a complete loss of all dentition, which is a worldwide phenomenon. According to the world health Organization criteria, edentulous patients are considered physically impaired, disabled and handicapped because of their inability to properly masticate and speak [6]. The rate of chewing and mastication depends from person to person and can also be related to the type of food being taken [7]. There are various systemic diseases which can cause early loss of teeth [8]. There are various treatment options available for the treatment of edentulism,

¹ Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai-77, India, Email ID- 151601046@saveetha.com

²Corresponding author: Professor and Head, Department of prosthodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai-77, India, Email ID- ashok@saveetha.com

³Professor and Head, Department of Pedodontics, Saveetha Dental college & Hospitals, Saveetha Institute of Medical and technical Science, Saveetha University, Chennai-77, India, E-mail ID- Deepag@saveetha.com

which include wearing of denture, implant placement made of titanium has been used widely in replacement of single and multiple teeth [9,10]. Wearing dentures have an impact on the oral as well as physical health of a person. Most patients prefer taking meals with less fiber, carotene, vegetables, and meals which ease the process of mastication. However, this is closely associated with cancer and heart ailments [11]. Prosthetic dentures are simple, esthetically good and easy to use [12]. Improper care of dentures can lead to bacterial infection, which can cause skin and soft tissue infection, which can be treated with various medicaments and natural products such as aloe Vera which exhibits best medicinal properties [13,14].

The single complete denture opposing all or some of the natural dentition is not an uncommon occurrence [15]. Single complete denture is a challenging situation especially when the opposing natural dentition is not in proper plane of occlusion [16]. Single complete denture construction against a non modified natural dentition is a very challenging task for the dentist due to certain drawbacks like frequent prosthesis fracture, dislodgment, difficulty to obtain occlusal balance and to achieve a satisfactory esthetic [17,18]. Mal-aligned, tilted or supra-erupted teeth in the opposing arch are some of the problems that should be corrected to achieve a balanced occlusion in patients who require Single complete denture [19]. The single complete denture is a complex prosthesis that requires a complete understanding of the basics of prosthetic rehabilitation of the lost natural dentition [20]. The challenges faced in this study include the male female ratio, limited amount of studies or research has been done regarding mandibular single complete denture.

The need for this type of research helps us to get more insight and data regarding the number of single dentures being given. The study helps us to understand the difficulties and difference causes of improper balanced occlusion in single complete dentures. The aim of the study is to find the number of single complete dentures delivered in Saveetha dental college as a retrospective study of 1 year.

Materials and methods:

The study was conducted in a university setting. The main advantage of this study includes the easy access of the data. The ethical approval was obtained from the Institutional review board. The number of people involved in the study included 2 researchers and the data was reviewed by 2 reviewers. Out of the total 86000 patients reported in the Saveetha Dental Hospital from June 2019 to March 2020, the data was collected, analysed and tabulated in excel sheets. Inclusion criteria were all patients who have undergone single complete denture insertion. Exclusion criteria were patients with systemic illness, and incomplete databases in the software. The cross verification of the data was done using photographs. Incomplete and censored data was excluded from the study.

Data analysis was done using SPSS software by IBM. The statistical analysis used was chi square test in descriptive analysis. The output obtained from the software was represented in the form of pie charts and bar graphs.

Results:

A total of 30 cases were obtained and tabulated in excel sheet. The data analysis was done using SPSS software. The total number of single complete dentures given was 75.9% (figure 1). Based on the distribution of gender, the most common gender for single complete dentures showed male compared to female (figure 2). Based on the age of the patient, the most common age group for single complete denture showed the highest in 48 and 50 years of age, followed by 67 years of age (figure 3).

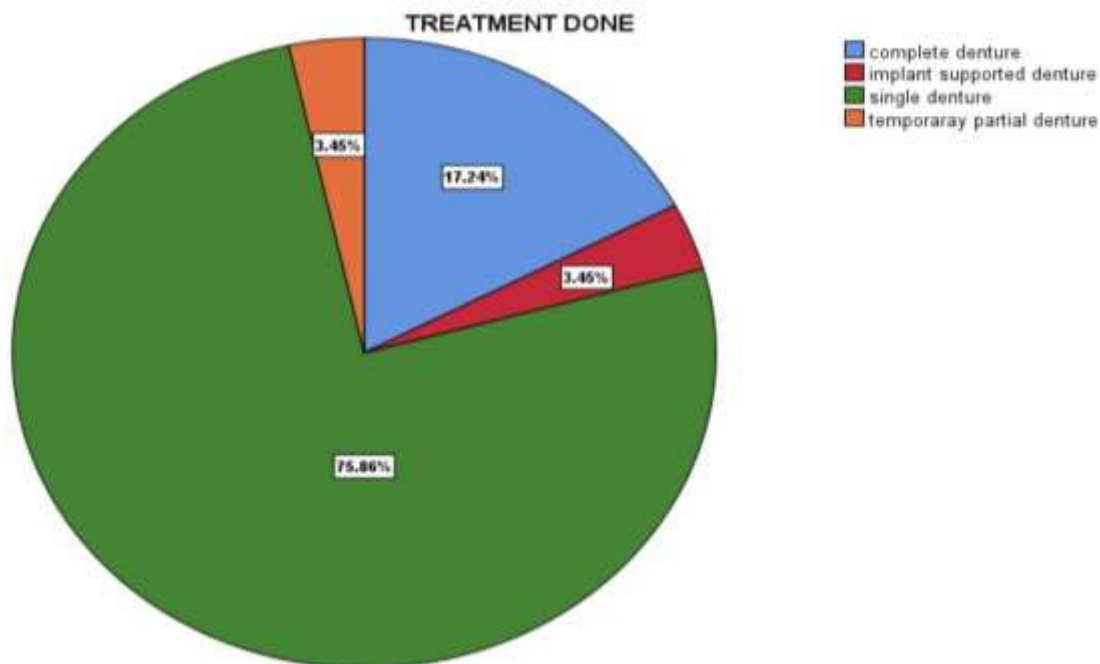


Figure 1: The pie chart depicts the percentage distribution of single complete dentures inserted. Green colour represents single complete denture(75.86%), blue colour represents complete denture(17.24%), orange colour represents temporary partial denture(3.45%) and red colour supports implant(3.45%). Based on the graph single complete denture treatment was done more compared to complete denture, temporary partial denture and implant.

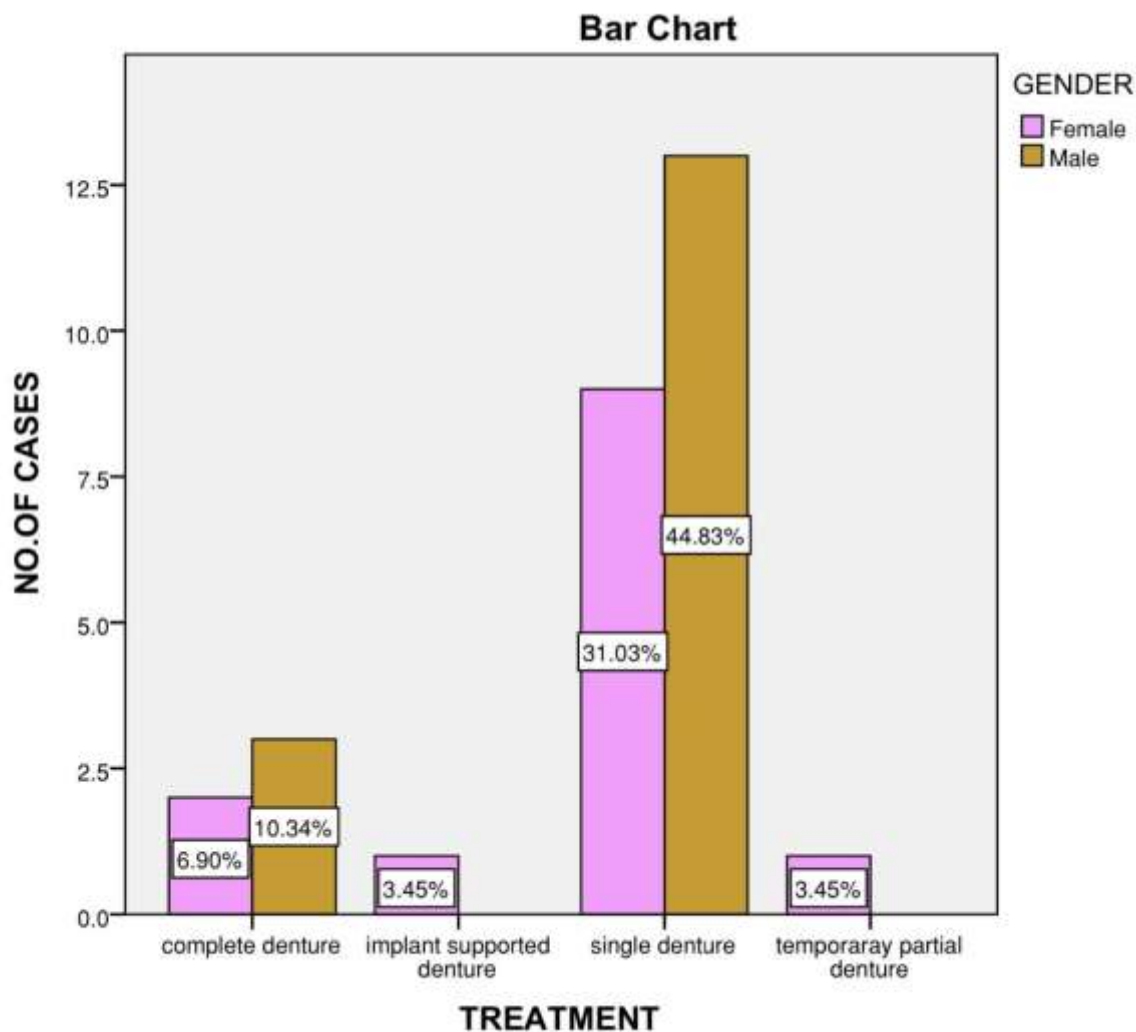


Figure 2: Bar graph shows the comparison between the type of denture treatment opted based on the gender of the patient. The X axis represents the treatment done and y axis represents the no of cases based on gender. The pink colour represents female and brown colour represents Male. Based on the graph, single complete denture treatment was most commonly done in male patients compared to female. Pearson's chi square value: 2.645, DF: 3, P value : 0.450(>0.005), insignificant association(chi square test).

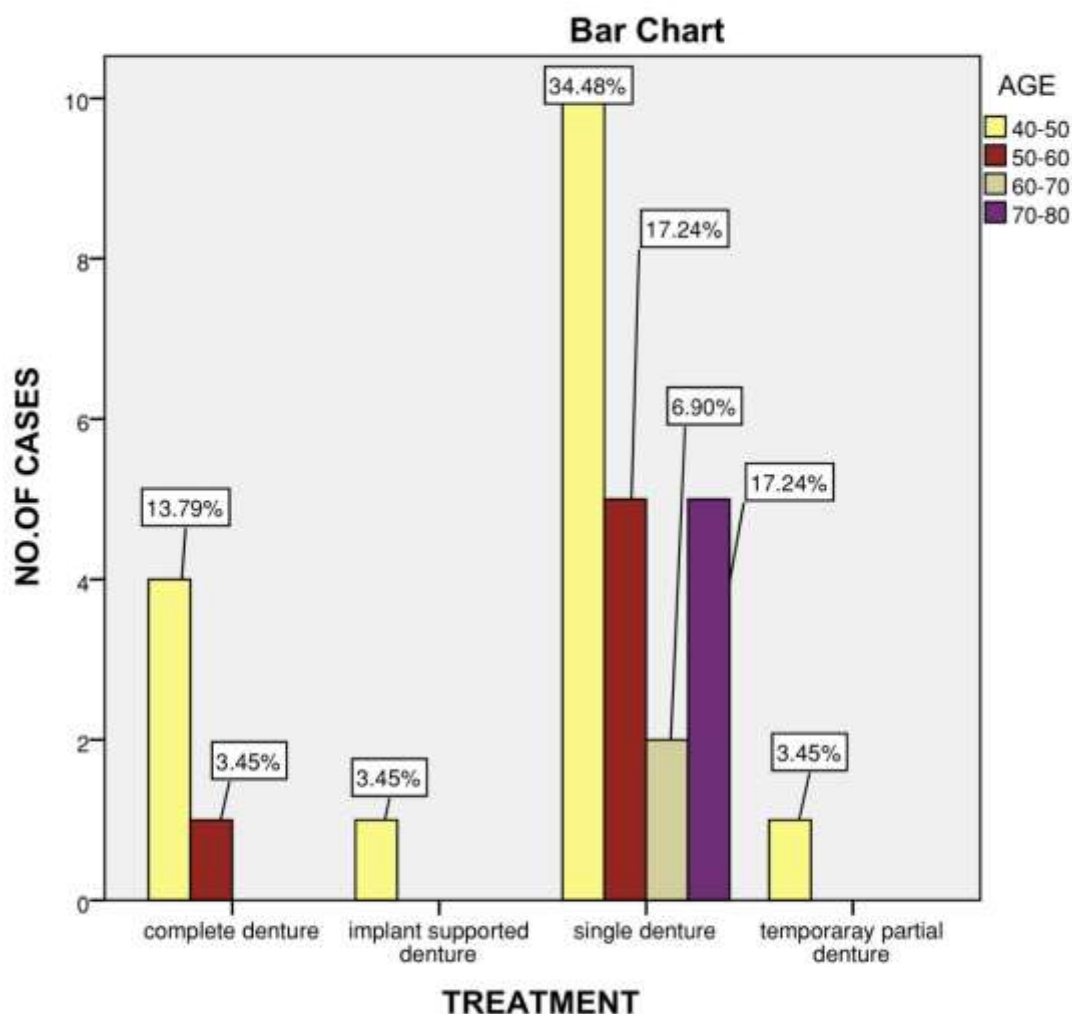


Figure 3: Bar graph shows the comparison of the number of single complete dentures given based on the patient's age . The x axis represents the treatment done and y axis represents the no of cases based on the patient's age. Yellow colour represents 40-50 years of age, Maroon colour represents 50-60 years of age, grey represents 60-70 years of age, purple represents 70-80 years of age. Based on the graph single complete denture was done most commonly in 40-50 years of age. Pearson's chi square value: 31.355, DF: 42, P value: 0.885(>0.005), insignificant association (chi square test)

Discussion:

Increase in the life expectancy and increase in population, creates high demand in dental care especially in the field of prosthodontics [21]. A single complete denture can oppose natural teeth that are in sufficient number not to necessitate a fixed or removable partial denture. It is a denture which replaces the missing teeth in an arch and opposed a natural dentition [22,23]. The following details can be summarised from the results obtained which shows that the total number of single complete dentures given showed 75.9%. The most common gender for mandibular single complete denture showed male and the most common age for mandibular single denture were 45-50 years of age.

One of the most common clinical situations involving a single denture is that of a complete lower denture and upper natural teeth. Based on the study, the number of complete denture dentures given were found to be 75.9%. According to a study conducted by Sharry et al. Reported that the situation in which a patient has become

entirely edentulous in one jaw while retaining either all or some of his/her natural teeth in the others is not uncommon. Neither is it uncommon to find a successful complete denture for such patients. Single complete dentures are very difficult and the reasons of difficulty could be due to the firmness and rigidity with which the natural teeth are retained in the bone and the magnitude of the force they resist or deliver without discomfort or displacement. Ridge resorption also plays an important role, various factors affect the recession including tissue thickness [24]. The second reason is related due to the occlusal form of the remaking natural teeth, which will dictate the occlusal form of the denture. Selection and proper placement of teeth can also affect the denture [25]. A balanced occlusion should be obtained while fabricating a single complete denture. It is developed to improve the stability of the dentures during all functional and or parafunctional movements of the mandible [26]. Lack of the occlusal balance may cause a variety of denture related problems including instability, mucosal inflammation, soreness, bone resorption and ultimately leading to patient dissatisfaction [27]. Marginal discrepancy can cause a lot of effect on the long term success [28,29].

The study also showed that the most common gender included the male and the more common age group was 45-50 years. According to a study done by xie et al. edentulism is more commonly found in male compared to females [30]. Suomien Taipale et al concluded that in 1979 edentulism was more commonly found in females, compared to male [31]. The reason for more number of treatments done for Male compared to females could be attributed to the fact that females are more dependent on male to take them for treatment . Males are not dependent upon anyone and they can easily come for treatment [32]. According to a study conducted by sonkesariya et al. Nearly, 22.4 and 55.8% of the rural and urban females were completing edentulous in the age of above 43 years in both populations. 77.5 and 44.1% of rural and urban males were completing edentulous in the age of above 33 and 53 years [33].

Reduced sample size and the study population included a particular geographic location, which were the limitation of the study. The future scope of the study included the inclusion of other geographic populations, increase in sample size which could yield better results.

Conclusion:

Within the limits of the study, the mandibular single complete dentures given were 75.9% and more prevalent in males with an age group of 45-40 years of age.

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Author's contribution:

Maajida Aafreen carried out the design of the work, data collection and data analysis with interpretation. Ashok V carried out the drafting of the article. Deepa G carried out the critical revision of the article. All the authors read and approved the final manuscript.

Conflict of interest:

The authors would like to declare that there was no conflict of interest.

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