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Tooth Loss And Edentulism Among South Indian Population

Research Article

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Abstract

Missing teeth impair the quality of life. It interferes with the process of mastication, aesthetics and other functions of the oral cavity. The presence of teeth in the oral cavity is a major consideration for the evaluation of the oral health of an individual. The aim of this study is to evaluate tooth loss and edentulism among the south Indian population. This is a retrospective study. Data of the patients who visited Saveetha Dental College between September 2019 and March 2020 were collected and searched for those who underwent full mouth extraction. The data was tabulated using the parameters of age, gender and the reason for edentulism (dental caries, periodontitis, others). All the data were tabulated and analysed with the use of the statistical software IBM SPSS version 20.0. Statistical analysis of the data was done using Chi square test. Within the limits of the study, it is proven that the prevalence of total edentulism is observed in the population above the age of 50 years. Total edentulism shows a male predilection where the main causes for tooth loss in an individual is the presence of dental caries and periodontal diseases.

Keywords: Tooth Loss; Edentulism; Dental Caries; Periodontal Diseases.

Introduction

The loss of teeth in the oral cavity is a major cause of the impairment of the quality of life in an individual [4]. It has an effect on the daily functions of a person like mastication and phonetics [25]. This causes difficulty in the patients everyday social lifestyle as it interferes with his or her aesthetic appearance [10]. The measure of oral health depends on the presence of teeth in the oral cavity and the percentage of teeth missing in the oral cavity [19]. The prevalence of edentulism depends mainly on the age, gender, tooth type and the incidence of caries and periodontal health on the tooth and its surrounding tissues [3]. This helps in the evaluation of the oral health of an individual.

The prevalence of caries and periodontal diseases is a major cause of extraction of tooth from the alveolar socket which causes edentulousness [7]. The extraction of the respective tooth leads to functional impairment [9]. This is more evident in the patients with a lower socio-economic status (Patil et al., 2017). (Marimuthu et al., 2018). These patients have shown reduced awareness to dental health. Incidence is more in males with personal habits like cigarette smoking, alcohol abuse, etc. causing increased susceptibility to periodontal and tooth abnormalities [20, 18]. Ageing is also a major reason for the evidence of tooth loss and edentulism and various other dental and health issues [17, 26]. It is also present with increased prevalence based on oral habits, personal habit, diet which plays an important role in the oral health status of an individual [23]. Thus, this study was done to evaluate and find out the frequency of extractions and functionally impairing edentulousness among the different gender and age groups of south Indian population.

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Materials And Methods

This study was done based on the data collected from all the patients visiting saveetha dental college between September 2019 and March 2020. Among them, cases sheets of patients who underwent full mouth extraction were retrieved for further analysis. The approval for the study was obtained from the Institutional ethics committee.The data collected was reviewed, analysed and evaluated. Out of 21645 patients present in the large pooled data, those who underwent full mouth extractions were identified, segregated and were analysed. Cross verification of data was done based on photographs. To minimise sampling bias, all the individuals in the data who underwent full mouth extractions were included without sorting process. The collected data was tabulated in excel sheets and was analysed with the use of the statistical software IBM SPSS version 20.0. The collected data was analysed and the tabulation and graphical illustration for the results of the collected data was done. Management of incomplete data was done by means of telephonic interviews with the patients respectively. If there was no response the specific data was excluded. Analysis of the data was done through the descriptive and inferential statistics.

Results And Discussion

Edentulousness was prevalent in patients in higher age groups, above 50 years of age (72%) when compared to patients of age less than 50 years of age(28%).(Figure 1) Complete edentulism was also more prevalent in males (55.9%) when compared to females (44.1%) (Figure 2). Patients above 50 years of age and males had higher association with complete edentulism; however it was not statistically significant (p=0.051) (Figure 3).

The main reasons for edentulism is the incidence of caries and periodontal diseases. Total edentulism due to caries incidence was more common (56.5%) when compared to incidence due to periodontal disease (35.9%) while the other causes for edentulism were trauma and congenital disorders which are of lesser prevalence (Figure 4).

Age and gender distribution of total edentulism, showed that the patients above 50 years of age showed higher prevalence of tooth loss (p = 0.051) [28] (Fig-3). This is in controversy with many studies where the mean age of edentulousness is over 60 years. (Fig-5) Swetha et al, in their study stated that the increased prevalence of complete edentulism and tooth loss was seen in patients between 65 and 74 years age group [26].

There are many reasons for edentulism, among which most common are Dental Caries, periodontitis, trauma, systemic infections. Caries and periodontitis has been stated to be the main reasons evidently seen with increased frequency for tooth loss and complete edentulism in an individual [2]. The presence of caries ,trauma, periodontal diseases, tooth loss happens regularly with more frequency than reasons like genetic malformations [6]. These defects impair the normal physiological functions of a tooth and make it infected with carious lesions in the oral cavity indicating the extraction of the particular tooth [26].

This study has indicated that males are more susceptible to total edentulism and have shown increased prevalence to total edentulism (Fig-6). Males in general are increasingly exposed to different types of environmental conditions and have an increased rate of infective personal habit consumption like cigarette smoking, alcohol abuse,etc leading to increased susceptibility to caries and other oral conditions leading to the extraction of the tooth involved. [11]. Increased susceptibility to extraction show a prevalence and increases the possibility for full mouth extractions. But the reasons for tooth loss in not mainly caries and periodontal diseases but also its is proportional to the individual's socio-econonmic status, nutrition status, health status ,traumatic reasons(Ishikawa et al., 2019) [9] of an individual like personal reasons for the patient to have not undergone treatment for the particular finding where the treatment could have been restorative or invasive [29] [22]. This is also an explanation for total edentulism. Also the indication of the patient history with respiratory and cardiac diseases causes a delay in the treatment regimen that can lead to the extraction of tooth [4, 11].

Figure 1. Shows prevalent age groups with complete edentulism.

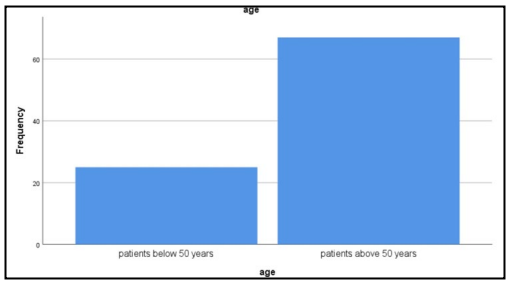


Figure 2. Shows Gender distribution of study population with complete edentulism.

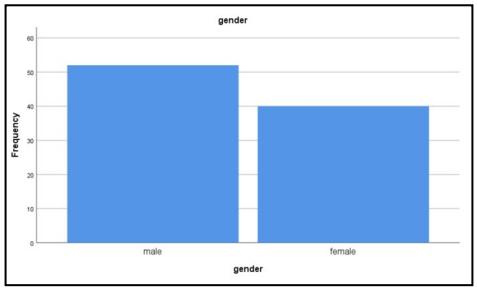


Figure 3. Represents association between age,gender and complete edentulism.

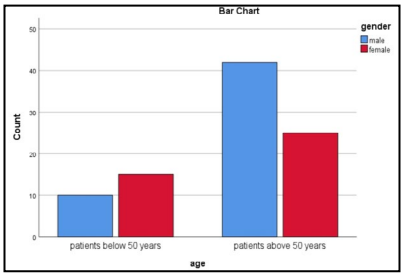


Figure 4. Depicts etiology for tooth loss. 56.5% represented caries as the etiological cause, 35.9% represented periodontitis as their etiological cause and 7.6% represented other reasons.

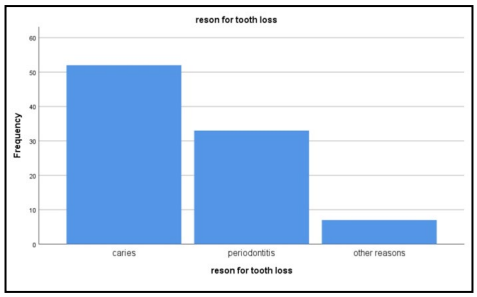


Figure 5. Shows the association of age and the etiology for tooth loss.

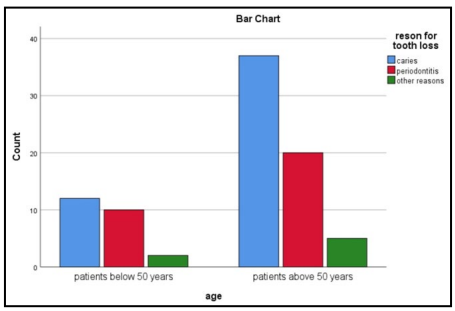
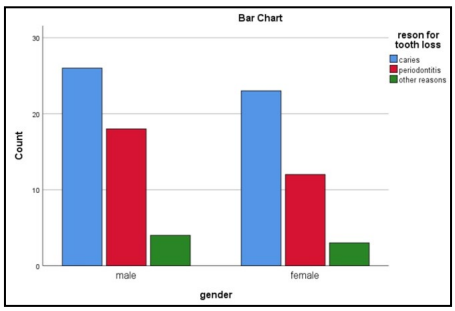


Figure 6. Shows the association between gender and the etiology for tooth loss.



Caries is the single most chronic condition which mostly affects 70% of the world population [5]. It is clear that its incidence increases with increase in age. It is one of the major risk factors if left untreated and implicated as a major cause for the tooth removal. The control of the progression is the measure which has to be taken to control the progression of caries in an individual [27]. The major goal of dental professionals is to reduce the prevalence and educate the individuals with the importance and technique to avoid the occurrence of Dental Caries, but there are many cases where the treatment is avoided with reasons like the presence of immunodeficiency diseases to reduce the risk of transmission of the disease [11].

Periodontitis is also a major reason for tooth loss and its epidemiology exists as a result of poor oral hygiene and calculus deposition on the tooth surface [24]. occurrence of periodontitis in younger population is due to poor oral hygiene which if extensive is one of the causes for early edentulism in an individual [8]. Asian countries have the third highest prevalence for periodontitis, and has a higher incidence in India and is a potential risk factor for tooth loss. Reduction in the incidence, requires proper health education and dietary education in the particular geographic area [21].

Further measures to reduce the incidence of dental caries and periodontal diseases are taken by implementing oral health education measures and good health and dietary knowledge to the population. Further, scope for reducing the incidence of caries is taken with regular dental checkups and arrest of the developing carious lesions with preventive treatment, reducing the incidence of the extraction of the tooth from the tooth socket.

Conclusion

Within the limitations of the study, it was proven that the frequency of total edentulism was observed in people above 50 years of age and a male predominance was observed. Though this was not statistically significant; it has a lot of clinical significance with implication on oral health and awareness and quality of life in these patients. Complete edentulism is seen in ages as early as 34 years and in patients below 50 years. There were many causes for the incidence of total edentulism in an individual, but the most prevalent causes were Dental Caries followed by periodontal diseases. There is a need for more oral health awareness programs and regular dental check ups.

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