

Prevalence Of Missing Mandibular Anterior Teeth In Middle Aged Adults

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ABSTRACT:

Aim of the study was to identify the prevalence of congenitally missing mandibular anterior teeth in middle aged adults. Hypodontia is one of the most common dental anomalies in permanent dentition. Loss of anterior teeth is multifactorial origin ranging from trauma, periodontal disease, dental caries and persisting oral adverse habits. Poor oral health and tooth loss have a profound effect on general health, quality of life and can lead to poor dietary habits. Evaluation of patients who reported with missing mandibular anterior teeth to Saveetha dental hospital. Data of missing mandibular anterior teeth was collected from out of 86000 patients reported for dental treatment in Saveetha University. The results were statistically analysed with SPSS software. The males were more common with missing mandibular anterior teeth and tooth number 31(26%),41(25.7%) were more common. Within the limits of the study, Males had higher predominance and 31,41 were most common mandibular anterior missing tooth. There was no significant difference(>0.05) between gender, tooth number and missing mandibular anterior tooth.

1. INTRODUCTION

Hypodontia is one of the most common dental anomalies in permanent dentition.(1) Loss of anterior teeth was a major detrimental social implication for the sufferer that affects the normal social integration. Oral diseases such as dental caries, periodontal disease resulting in tooth loss are major public health problems worldwide.(2) Poor oral hygiene and tooth loss have a profound effect on general health, quality of life and can lead to poor dietary habits.(2,3) Loss of anterior teeth is from multifactorial origin ranging from trauma, dental caries, periodontal disease and persisting oral habits.(4) Dental caries are caused from microbial origin, Microbial pathogens have the ability to adapt themselves to changes in their environment.(5) Gingivitis and Periodontitis are initiated by way of microbial infection which leads to gingival inflammation and bleeding.(6) Periodontal diseases cause mobility of teeth and lead to tooth extraction. With the increasing incidence of periodontal diseases and development of antibiotic resistance, there is a global need for alternative treatment modalities that is safe, effective and economical. Aloe Vera is a medicinal plant which has greater medicinal value and vast properties for curing and preventing oral diseases.(7) The anterior teeth are primarily related to the esthetics as they play an important role in the functions of lip support and phonetics. Size, form, and colour of anterior teeth must be in harmony with the surrounding facial environment for a completely edentulous patient.(8) Loss of anterior teeth affects the aesthetic appearance of the individual and other social factors too. Studies

have shown that habits like mouth breathing and persisting tongue thrusting habit tend to malocclusion and eventually lead to loss of tooth.(9)

Loss of tooth due to caries has previously been reported as the common cause of missing teeth among patients attending for treatment in Kenya.(10)⁽¹¹⁾ Heredity is one of the possible factors associated with congenitally missing mandibular incisors.(12) The missing teeth are replaced by different treatment means like complete denture in case of completely edentulous patients and removable partial dentures, fixed partial dentures and implants for partially edentulous patients. Removable partial dentures (RPDs) are more commonly accepted means of replacing partially edentulous patients thereby restoring function and aesthetics. RPDs are still considered the main treatment modality for replacement of missing teeth in South East Asian countries such as Sri Lanka.(13) For decades partially edentulous patients are either treated with fixed prosthesis or removable prosthesis. Recently fixed prosthesis is more popular than removable prosthesis due to comfort, function and aesthetics. Fixed prosthesis either restored taking support from teeth or using implants. Replacing the anterior teeth with good aesthetics is a complex procedure.(14) A successful replacement with fixed partial denture accounts to many factors. Marginal fit being one of the vital factors dictating the prognosis of the prosthesis, it is essential to record the prepared and unprepared surfaces of the abutment with absolute precision.(15) Prosthetic rehabilitation is done to regain function, speech and esthetics. Prosthetic rehabilitation in patients with bony defects is critical.(16) All-ceramic restorations offer superior biocompatibility than the composite resin and porcelain-fused-to-metal restorations. However, the marginal fit of all-ceramic restorations does not match that of cast restorations, which offer better marginal adaptability.(16,17) The marginal fit is of paramount importance for long term success of all ceramic restorations. Discrepancy in marginal fit facilitates salivary infiltration and microleakage resulting in dissolution of the luting cement; thus, increasing the susceptibility to caries, eventually leading to pulpal damage.(18) Implant prosthesis has both advantages and disadvantages equally. The abutment screw loosening has been a common clinical disadvantage affecting the success of the implant as a long term prosthesis. With repeated insertion and removal of the implant abutment screw during fabrication of the restoration, frictional wear at the microscopic level in the screw threads had been reported.(18,19) The implant–abutment interface determines the joint strength, lateral, and rotational stability. Since implant is a surgical procedure, there are chances of post surgical defects.(20) Post-surgical defects could be rehabilitated or camouflaged using Cement-retained restorations. There are numerous advantages for cement-retained prosthesis over screw-retained prosthesis such as passive casting, axial loading, accessibility, progressive loading, etc.(21) Polymethyl methacrylate, latexes, vinyl polymers, copolymers, polyurethane elastomers, silicone elastomers and the various modes of retaining the facial prosthesis include straps, spectacle frames, extension from the denture, magnets, adhesives and implants material are the different types of materials used in prosthesis.(22) Improper restoration of missing teeth leads to infection in some cases. Cellulitis being a bacterial infection most commonly involves streptococci and staphylococcus aureus affecting the deeper layers of skin. The face which is affected may be swollen and appears red with break in the surface of skin.(23) Previously our team has a rich experience in working on various research projects across multiple disciplines The (24–26)(27–38)

The aim of this study was to evaluate the prevalence of congenitally missing mandibular anteriors in middle aged adults visiting Saveetha University for dental treatment. The aetiology of the missing teeth were also analyzed

2. MATERIALS AND METHODS

Data collection

The data collection was done from the out patient record of patients, who visited Saveetha university for dental treatment. From the total 86000 patients visited for dental treatment between June 2019 and March 2020, patients with missing mandibular anteriors were 4000 and they were reviewed. Cross verification was done with the help of photographs. To minimise sampling bias all data available was included. The inclusion criteria was the middle aged adult patients with missing mandibular anterior teeth. The exclusion criteria was patients without missing mandibular anterior teeth. The drawback of the study was that the data available was not location specific and people belonged to a different ethnicity.

Statistical analysis

After Excel tabulation, the data was transferred to SPSS. The analysis was done using SPSS [Version 19: IBM Corporation NY USA]. Descriptive statistics were used to calculate correlation between missing mandibular anterior teeth in young adults. The dependent variables were the patients with missing mandibular anteriors. The independent

variables were age and gender. Pearson chi square test was performed. The type of analysis done was correlation and association.

3. RESULTS AND DISCUSSION:

The results of our study depicted that males had more commonly reported with missing mandibular anterior teeth (Figure 1). There was increased tooth loss with increase in age (ie) Age group 50-60 was more common for tooth loss (Figure 2).

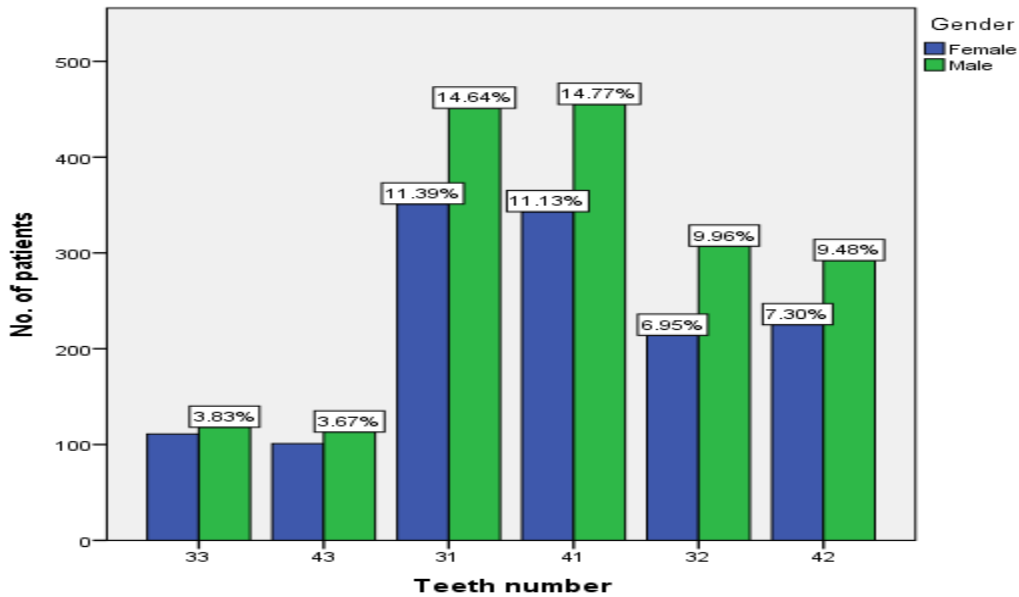


Figure 1: Bar graph depicting the distribution of patients based on association of gender and tooth number. X axis represents the teeth number and Y axis represents the number of patients(count). Colour blue denotes Male patients and colour green denotes female patients. Chi square test was done to find the association of gender and patients with missing mandibular anterior. Pearson’s chi square value = 12.000, df = 11, p value 0.364 (>0.05) statistically non significant. The graph depicts that there was male predominance also 31(26%) and 41(25.7%) were the most common missing tooth.

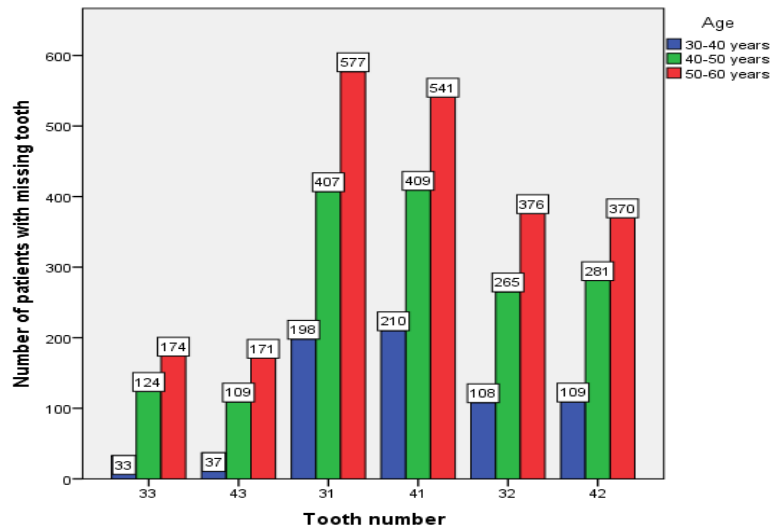


Figure 2: The bar graph represents the association between patients among different age groups and tooth numbers. X axis represents the tooth number and Y axis represents the number of patients with missing teeth. Majority of patients in the age group 50-60 years reported with missing tooth. Pearson's chi square value-30.000, df-25, p value-0.224 (>0.05) statistically insignificant.

The results obtained from the study showed that Males had the highest prevalence of missing mandibular anterior tooth. And tooth number 31 and 41 were most common missing mandibular anterior teeth. Mandibular anterior teeth were more commonly missing in elderly aged (51-60 years) patients than younger patients. The reason for this can development of caries and periodontal diseases. The chances of missing mandibular anterior was because of extraction more commonly due to caries or periodontal disease and congenitally missing cases where very minimal. When compared to the population, only few of them had mandibular anterior missing teeth, this shows that mandibular anterior missing is not a common disorder. The patients were advised to replace the missing tooth and explained about the consequences of not replacing which will lead to other abnormalities like supraeruption, proximal migration of other teeth etc. The advantages of the study are availability of the data and history of the patients. The limitations of the study are the available data are not location specific and belong to different ethnicities.

According to Hunstadbraten et al, the study reported that higher prevalence rates of hypodontia of permanent teeth in females than in males.(39) Backman et al reported that the most commonly congenitally missing teeth are the mandibular second premolars.(40) Niswander et al reported that the mandibular incisors were the most commonly missing teeth in Japanese population.(41) Sanya et al reported that the most commonly lost teeth are molars and principal cause of tooth loss was dental caries followed by periodontal diseases.(42) Fariborz et al reported that out of every 20 Iranian orthodontic patients, one might have some missing permanent teeth, needing early attention. Hypodontia was more prevalent in females (though not significantly) and in the maxilla. Although more females were affected, the number of missing per individual was greater in males. Davis et al reported that a very strong correlation between missing primary and missing permanent mandibular incisors is present in the group, and this has implications for prognosis and treatment planning. A fundamental developmental defect is implied.

4. CONCLUSION:

Within the limits of study, it can be concluded that mandibular central incisors (31,41) were the most common missing teeth. More number of males reported with missing mandibular teeth than females but the association of Gender association with missing mandibular anteriors was not significant. Also more subjects in the age range of 50-60 years reported with missing mandibular central incisors (31,41).

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