

Prevalence of Periodontal Disease among Individuals between 18-30 Years of Age: A Retrospective Study

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Abstract

Aim: The aim of this study was to assess the prevalence of periodontal disease among individuals between 18-30 years of age. **Materials & Methods:** The present retrospective study was conducted among outpatients reported to Saveetha Dental College, Chennai from June 2019 to March 2020. A total of 200 patients (100 males and 100 females) of 18-30 years of age were randomly selected as study participants. Based on the clinical examination data, the study subjects were categorized either into gingivitis or periodontitis. **Results:** Frequency distribution and percentage and chi-square test were calculated. Among 200 patients, 152 (76%) had gingivitis and 48 (24%) had periodontitis. In gender wise comparison, among 100 females, 82 (82%) had gingivitis and 18 (18%) had periodontitis. Among 100 males, 70 (70%) had gingivitis and 30 (30%) had periodontitis. Also, association between gender and periodontal status was assessed and found to be statistically significant with the p value of 0.047. **Conclusion:** The prevalence of gingivitis (76%) was more than periodontitis (24%) within 18-30 years of age in the given population. Also, the prevalence of gingivitis was higher in females, whereas the prevalence of periodontitis was higher in males.

Keywords:

Gingivitis; Aggressive periodontitis; Chronic periodontitis; Dental plaque

Introduction

Oral health plays an important role in maintaining the general health.

Periodontal diseases include gingivitis and periodontitis. Both are infectious diseases that result from bacterial infection where the causative bacteria are found in dental plaque. [1-4]

However, gingivitis is usually the early phase of the inflammatory process and if left untreated leads to periodontitis.

Therefore, controlling gingivitis may have a profound health effect when it may result in a lower prevalence of destructive periodontitis. [5-7]

Periodontitis refers to chronic inflammatory disease affecting the periodontal supporting tissues of the teeth. [8,9]

It is an infectious disease resulting in inflammation within the supporting tissues of the teeth, progressive attachment and bone loss. It is characterized by pocket formation and/or gingival recession. [10]

The most common forms of periodontitis are chronic periodontitis, aggressive periodontitis,

periodontitis as a manifestation of systemic diseases. [11] Chronic periodontitis commonly occurs in adults above 30 years of age. The nature of disease progression is gradual in chronic periodontitis. [12] Periodontal inflammation is consistent with the local factors. Increased pocket depth, attachment loss as well as alveolar bone loss is seen. Less than 30% of sites get affected in localized chronic periodontitis and in generalized chronic periodontitis more than 30% of sites are affected. [13]

Aggressive periodontitis occurs below 30 years of age. The nature of disease progression is rapid in aggressive periodontitis. [14] Primary features include non-contributory medical history, rapid attachment loss and bone destruction and strong familial aggregation of cases. Periodontal inflammation is inconsistent with the local factors. Localized aggressive periodontitis shows circumpubertal onset, with localized attachment loss at incisors and first molars; interproximal attachment loss at two or more permanent teeth, one of which

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How to cite this article: Ahamed TS, Rajasekar A, Mathew MG Prevalence of Periodontal Disease among Individuals between 18-30 Years of Age: A Retrospective Study Ann Med Health Sci Res.2021;11:198-204

is a first molar and involvement of two or fewer teeth other than the first molars and incisors. Generalized aggressive periodontitis usually affects persons under 30 years of age, but patients may also be older. This condition presents with generalized interproximal attachment loss at three or more permanent teeth other than the first molars and incisors. [15]

Periodontitis as a manifestation of systemic diseases is the diagnosis to be used when the systemic condition is the major predisposing factor and when local factors are not clearly evident. In the case in which periodontal destruction is clearly the result of local factors but has been exacerbated by the onset of conditions such as diabetes mellitus or HIV infection, the diagnosis should be chronic periodontitis modified by the systemic condition. [16]

Even though dental plaque is the primary etiologic factor, the disease is modified by a variety of risk factors such as smoking, poor oral hygiene, systemic diseases, medication, age, gender, hereditary, malnutrition and stress. [17] Periodontal disease is one of the major dental diseases resulting in tooth loss in human beings across the globe. [18] Hence, this disease has a negative impact on the individuals quality of life. Therefore it is mandatory to know the prevalence of periodontal disease. Previously our team has a rich experience in working on various research projects across multiple disciplines. [19-33] Now the growing trend in this area motivated us to pursue this project.

Literature search reveals numerous studies assessing the prevalence of periodontal disease among different age groups and gender. However, there are no studies assessing the periodontal disease prevalence between 18-30 years of age. In order to address this lacunae, this study was undertaken to address the prevalence of periodontal disease in individuals between 18-30 years of age.

Methodology

The present retrospective study was conducted among outpatients reported to Saveetha Dental College, Chennai from June 2019 to March 2020. A total of 200 patients (100 males and 100 females) of 18-30 years of age were randomly selected as study participants. Patients with systemic diseases, patients under long term medications and smokers were excluded from the study. Based on the clinical examination data, the study subjects were categorized either into gingivitis or periodontitis and the prevalence was calculated. The collected data was then entered in Microsoft Excel spreadsheet and analyzed using SPSS software (IBM SPSS Statistics, Version 23). Frequency distribution and percentage and chi-square test were calculated for data summarization and presentation.

Results

The study sample consisted of 200 patients. Among 200 patients, 152 (76%) had gingivitis and 48 (24%) had periodontitis [Figure 1]. Also, in gender wise comparison, among 100 females, 82 (82%) had gingivitis and 18 (18%) had periodontitis. Among 100 males, 70 (70%) had gingivitis and

30 (30%) had periodontitis. The prevalence of gingivitis was higher in females, whereas the prevalence of periodontitis was higher in males.

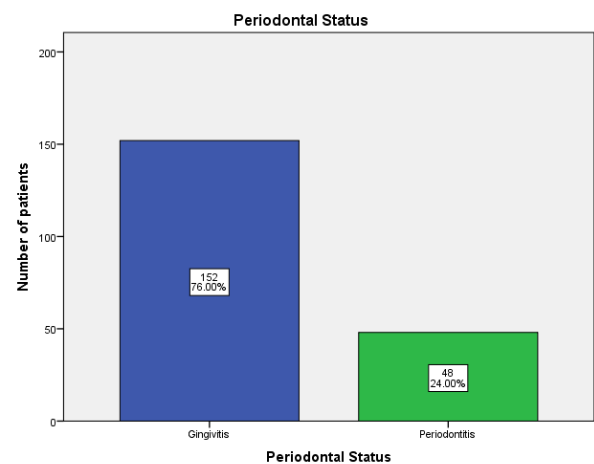


Figure 1: Bar chart showing distribution of gingivitis and periodontitis among study population. X-axis represents periodontal status and Y-axis represents number of patients. Among 200 patients, 152 (76%) had gingivitis (blue) and 48 (24%) had periodontitis (green).

Also, association between gender and periodontal status was assessed and found to be statistically significant with the p value of 0.047 [Figure 2].

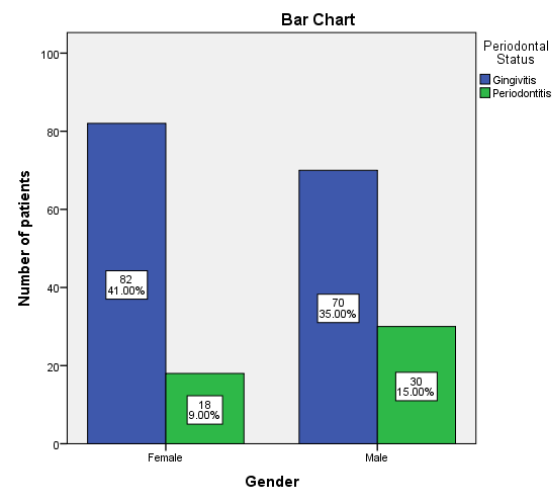


Figure 2: Bar chart showing association between gender and periodontal status among study population. The X-axis represents gender and the Y-axis represents the number of patients. The prevalence of periodontitis (green) was higher in males and the prevalence gingivitis (blue) was higher in females. Association between gender and periodontal status was statistically significant. (Chi-square test; $p=0.047$).

Discussion

The present study assessed the prevalence of periodontal disease among 18-30 years of age. Jagadeesan et al. [34] conducted a study to assess the periodontal disease prevalence

in Puducherry and found out the disease prevalence increased with age and the risk of being affected by periodontitis was 2-3 times for persons above 30 years of age than below. Doifode et al. [35] in a field survey in Nagpur found the prevalence of periodontal disease being 34.8%. Most of the studies in literature focussed on the prevalence of chronic periodontitis. Considerably less epidemiological data were available on aggressive periodontitis than on chronic periodontitis.

The age group selected in the present study was less than 30 years, which is the common age group for prevalence of aggressive periodontitis. However, this condition needs to be confirmed by various microbiological, radiographic and immunological assays. But the present study was done only based on clinical features and so the study participants were categorized either as gingivitis or periodontitis.

Ababneh et al. [36] studied the prevalence of periodontal disease among the North-Jordan population and found that 76% had gingivitis and 7.7% had periodontitis. These findings are in accordance with the present study as 76% had gingivitis. Also, Umoh et al. [37] conducted a study to assess the prevalence of gingivitis and periodontitis in Nigerian population and found that the prevalence of gingivitis and periodontitis was 75.4% and 15.4% respectively. Though the previous studies are in agreement with the present study, the study population differs.

Among the South Indian population, Almadi et al. [38] conducted a study to assess the prevalence of aggressive periodontitis and found that prevalence was 0.15% between 18-30 years of age. It is contrary to the present study, with the prevalence being 24%. This might be because in the present study, only clinical parameters were considered and hence the diagnosis was given broadly as periodontitis. [39-45]

Also, in the present study, 30% of males had periodontitis and only 18% of females had periodontitis. Shiau et al. [46] in his systematic review assessed the gender intersection in chronic periodontitis and found that sex exhibited a significant association with prevalence, reflecting a 9% difference between males and females (37.4% vs. 28.1%, respectively). The present study is in accordance with the previous study, as higher degree of disease prevalence was observed among males, indicating the poor oral hygiene practices of males as compared to females.

The limitations of the present study include limited sample size and only clinical parameters were considered to categorize the disease. Therefore, further studies are required to confirm the finding of the present study by including clinical, radiographic, microbiological and immunological assays to diagnose and categorize the periodontal disease.

Conclusion

Within the limitations of the present study, it was concluded that the prevalence of gingivitis (76%) was more than periodontitis (24%) within 18-30 years of age in the given population. Also, the prevalence of gingivitis was higher in

females, whereas the prevalence of periodontitis was higher in males.

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