

## Gingival Recession In Patients With Good Oral Hygiene - A Retrospective Analysis

Research Article

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### Abstract

Gingival recession is a term for apical displacement of gingival margin below the cemento enamel junction. It is a common and undesirable condition which is usually common with increase in age. Gingival recession is a common finding in most general practice. It may be indicative of poor oral hygiene. The present study aims to evaluate the prevalence of gingival recession in patients with good oral hygiene. A retrospective study was done based on data analysed from 86000 patient records collected in a dental outpatient department, out of which 2843 patient records who had presented with good oral hygiene were reviewed. Presence or absence of gingival recession was recorded. Excel tabulation was done and then imported the data to SPSS version 20 for statistical analysis. Out of the 2843, people in the age group of 36-55 years had higher gingival recession and good oral hygiene compared to other age groups that is about 33%. 64% of sample size in the age group of 56 - 80 years showed gingival recession despite having good oral hygiene status. Within the limits of the study, good oral hygiene may not be linked with gingival recession, however habits such as improper tooth brushing technique may cause recession. 18.4% of the total study group showed good oral hygiene and gingival recession.

**Keywords:** Age; Gingiva; Gingival Recession; Oral Hygiene.

### Introduction

Gingival Recession is a common problem that occurs in most adults as they age. According to a national survey [1], 88 % of people above the age of 65 and 50 % of adults over 18 years tend to have gingival recession. Recession often leads to hypersensitivity due to exposure of underlying cementum. Recession in anterior also leads to loss of aesthetics.[2, 3] Teeth with recession are more prone to root caries and abrasions. Studies suggest improper brushing techniques may also predisposed to recession [4-7]. It is being contemplated that gingival recession is primarily because of two etiologies frequent and improper brushing habits and high deposits of plaque, calculus due to poor oral hygiene. [8, 9]. Forceful brushing and cervical abrasions eventually leading to gingival recession has been strongly linked [10, 11].

Baker and Seymour in 1976 [12] described the pathogenesis of gingival recession. According to this mechanism there are 3 stages. First stage involves initial clinical inflammation followed by epithelial proliferation of rete pegs. Third stage involves increased proliferation and loss of connective tissue core leading to reduced nutritional supply eventually leading to gingival recession. Waerhaug [13] claimed that if free gingiva is thin, then there can be proliferation of epithelial cells from dentogingival epithelium. Further, the connective tissue zone depletes and both these epithelium fuse which eventually results in gingival recession.

Previously numerous clinical trials [14-19], and literature reviews [20-28] over the past 5 years have been done on mechanism, treatment of gingival recession and other related fields of study. Gingival recession is a well researched field of Periodontics. Many studies regarding its etiology and effects have been done. How-

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ever a study to analyze the prevalence of gingival recession in patients with good oral hygiene has not been popular. Such a study may help a practitioner in better diagnoses by understanding the pattern of soft tissue destruction. Thereby, prepare preventive measures to improve the patients public dental health. Most similar earlier studies had certain limitations such as poor patient cooperation and study group limited to certain age groups [29]. Previously our team has a rich experience in working on various research projects across multiple disciplines [30-44]. The aim of the present study is to evaluate the prevalence of gingival recession in patients with good oral hygiene.

## Materials and Methods

### Study design and setting

The study was carried out after obtaining approval from the Institutional Ethical Committee (Ethical approval number: SDC/SIHEC/2020/DIASDATA/0619-0320). In this retrospective study, records of 86000 patients who had visited Saveetha dental College and hospitals from June 2019 to March 2020 were analysed and the study population included all patients with good oral hygiene. A total of 2843 case sheets of patients who had good oral hygiene were reviewed.

### Data collection

The inclusion criteria was all patients who reported with good oral hygiene. The exclusion criteria was any incomplete data that

wasn't recorded properly. All available data were included in the study to minimise sampling bias. Patients of 7-80 years of age were included in this study. Collected data was cross verified using photos and case sheets. Data collected was then tabulated. Inclusion criteria consisted of all patients with good oral hygiene from 7- 80 years of age. Patients with good oral hygiene and other adverse habits such as smoking were excluded. All data was collected and tabulated using MS Excel.

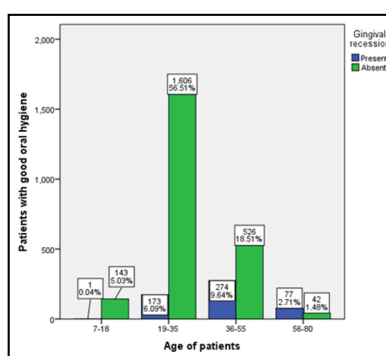
### Statistical Analysis

After tabulation using MS Excel, the data was exported to IBM SPSS software [Version 20: IBM Corporation NY USA] for statistical analysis. Descriptive statistics was done to assess the prevalence of gingival recession in patients with good oral hygiene. Chi-square test was done to statistically analyze the data to identify any significant level of variation of association. The significance level was set at 0.05

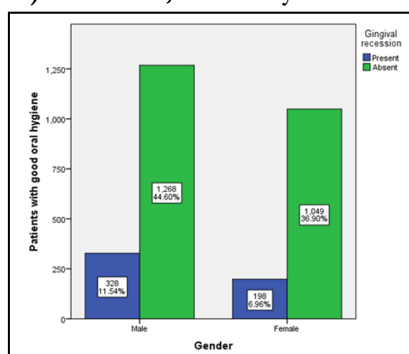
## Results

From the study it was evident that the patients in the age group of 36-55 years had a high prevalence of gingival recession (9.64%) and patients in the age group of 19-35 years had comparatively lesser prevalence of gingival recession compared to other groups (Figure 1). It was also seen that males had a higher prevalence of gingival recession compared to females (Figure 2). Using IBM SPSS software the association between age and gender was analysed (Table I). Out of the 2843, people in the age group of 36-55

**Figure 1. Bar chart shows the association between presence or absence of gingival recession and age of patients. X axis depicts the age of patients in years. Y axis represents the number of patients with good oral hygiene. The graph shows the age group of 36-55 years more commonly presented with gingival recession (Blue) and patients in the age group of 19-35 years showed least common occurrence of gingival recession (Green) compared to other groups. Chi-square test, Pearson's Chi square value- 421.743, p value - 0.000 ( $p < 0.05$ ). Therefore, data analysed is statistically significant.**



**Figure 2. Bar chart shows the association between presence or absence of gingival recession and gender of the patients. X axis depicts the gender of patients. Y axis represents the number of patients with good oral hygiene. The graph shows male patients had higher prevalence of gingival recession than females. Chi-square test, Pearson's Chi square value- 10.139, p value - 0.001 ( $p < 0.05$ ). Therefore, data analysed is statistically significant.**



**Table 1. Table showing age distribution of patients with good oral hygiene and gingival recession. Gingival recession is more commonly seen in the age group of 36-55 years despite maintaining good oral hygiene. [IBM SPSS software Version 20: IBM Corporation NY USA].**

			Gingival recession		Total
			Present	Absent	
ages	7-18	Count	1	143	144
		% of Total	0.00%	5.00%	5.10%
	19-35	Count	173	1606	1779
		% of Total	6.10%	56.50%	62.60%
	36-55	Count	274	526	800
		% of Total	9.60%	18.50%	28.10%
	56-80	Count	77	42	119
		% of Total	2.70%	1.50%	4.20%
Total		Count	525	2317	2842
		% of Total	18.50%	81.50%	100.00%

years had higher prevalence of gingival recession and good oral hygiene compared to other age groups (33%). However, in general only 18.47% of patients showed good oral hygiene and gingival recession. 64% of patients in the age group of 56-80 years of age showed gingival recession despite having good oral hygiene status.

**Discussion**

From the results it was clear that gingival recession can occur in patients with good oral hygiene. Factors such as improper brushing technique involving forceful brushing or low quality dental abrasive may lead to gingival recession despite the patients have good oral hygiene [45].

In the present study, males showed higher prevalence of gingival recession. This consensus was similar to Munghamba et al [46] which showed females had better oral hygiene than males and less evidence of gingival recession [46].

Despite having good oral hygiene gingival recession was more commonly seen in 36-55 years of age. This association of age and gingival recession doesn't mean this is due to physiological reasons [45, 47]. Gingival recession may occur with increase in age due to prolonged periods of exposure to toxic agents that lead to recession [48, 49]. There is also a lot of controversy regarding the etiology of gingival recession, early root exposure or gingival margin recession. Studies have reported physical, chemical or bacterial toxins as etiological factors for gingival recession [12, 50]. Previous literature showed that the primary precipitating factors of gingival recession are plaque, trauma due to improper brushing habits, frequent brushing, orthodontic treatment, smoking and other chemical irritants [12, 51-53]. Predisposing factors are primarily local anatomic variations such as improper tooth position such as buccal tipping, bone dehiscence, poor quality of attached gingiva, high frenal attachment and trauma from occlusion [54]. Localized gingival enlargement is usually seen in younger patients due to certain etiological factors whereas generalised gingival recession is seen in older patients due to accumulation of factors over a prolonged period of time [54].

It may be suggested that dentition in old people has been subjected to prolonged force of brushing and other irritants such as

plaque and calculus [45, 55]. It was also seen that the males tend to have more recession on the buccal aspect compared to females [45, 50].

Recession management is thoroughly based on the assessment of the causative factors and the condition of the soft tissue. Any therapeutic treatment will be compromised if the etiological factors are not removed or eliminated. A treatment plan should be formulated only when the causative factor has been addressed. In any treatment plan, the initial phase should involve preventive therapy which involves balanced diet and oral hygiene instructions. Along with this, preventive phase can be supplemented with scaling and root planing at regular intervals or whenever needed. Surgical treatment due to their invasive nature which leads to both physical and mental stress to the patient must be resorted to only as a last option of treatment. Root coverage procedures to be done only in cases of severe recession, sensitivity or aesthetic reasons. Case selection, patient awareness and surgical methodologies of treatment together can be used to treat gingival recession successfully.

Other factors such as immunological profile, hematology profile, position of teeth, diet, prosthetics, orthodontics or any periodontal surgery may affect gingival recession. The general consensus is that oral good hygiene shows reduced incidents of gingival recession. A future study on diverse populations taking into account, forceful brushing technique, physiological status and also dental status can provide a more accurate result. Our institution is passionate about high quality evidence based research and has excelled in various fields [56-66].

However, the drawback of this study is that there were geographic limitations and the people involved in the study were from an isolated population and belonged to the same ethnic group. The causative factors for the gingival recession to occur were not studied.

**Conclusion**

Within the limits of the study, It was observed that gingival recession was more common in 36-55 years of age even if good oral hygiene is maintained. Other factors such as improper oral

hygiene methods, tooth malposition and anatomical factors can predispose to gingival recession even at a young age. Hence, preventive therapeutic measures are needed along with good oral hygiene aids which can greatly reduce the development of gingival recession among all age groups.

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