

The Prevalence And Etiology Of Gingival Recession In A Representative Population Of Greater Noida

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Abstract: Introduction: Gingival recession is an undesirable condition that results in root exposure. The result often is not esthetic and might lead to sensitivity and root caries. The exposed root surfaces are prone to cervical abrasion. AIM- The aim of the study to evaluate the prevalence of gingival recession and risk indicators in a representative Greater Noida population. Material And Method: A total of 100 systemically healthy patients aged between 18 to 65 years who reported to the Department of Periodontics, ITS Dental college, Greater Noida were recruited for the study. The presence of gingival recession was recorded by using Sullivan and Atkins classification 1968. Result: Approximately half of the subjects examined exhibited gingival recession. The frequency of gingival recession was found to increase with age. High frequency of gingival recession was seen in males compared to females. The most common cause of gingival recession was found to be Subgingival crown margins, followed by calculus and tobacco consumption. Conclusion: More than half of the subjects exhibited gingival recession. The etiology of gingival recession is multifactorial and its appearance is always the result of more than one factor acting together. . [Naiyer M Natl J Integr Res Med, 2019; 10(3):40-44]

Key Words: Gingival recession, Fremitus test, Subgingival restorations, calculus.

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Introduction: Gingival recession is characterized by the displacement of the gingival margin apically from the mento-enamel junction. Gingival recession can be either localized or generalized and be associated with one or more surfaces.¹ It is clinically manifested as an apical displacement of gingival margin, leading to exposure, of the root surface which often results in poor esthetics.² increased susceptibility for root caries,³ and dentine hypersensitivity⁴. The mechanism by which gingival recession occurs is not well understood but it seems to be inflammatory in nature. A variety of aetiological factors is thought to cause recession of the gingival: oral hygiene habits, tooth mal-positioning, high frenum or muscle attachments, and iatrogenic factors related to various restorative and periodontal procedures.⁵⁻⁸ The main etiological factors are the accumulation of dental plaque biofilm with the resulting inflammatory periodontal diseases and mechanical trauma due to faulty oral hygiene technique.^{7,9} In spite of the frequent observation of gingival recession, the occurrence and severity of the gingival recession presents considerable differences between different study populations. There is a paucity of studies that have been carried out in India. Therefore, it is imperative to collect detailed information, to analyse the frequency and epidemiology of this condition, identify the etiological factors and establish preventive measures. Hence, the aim of the present study was to determine the prevalence

of gingival recession and to identify the most common etiological factor associated with the cause of gingival recession in a subpopulation of Greater Noida.

Materials And Method : The sample consisted of 100 subjects comprising both males and females within the age group of 18–68 years who visited the OPD of ITS Dental College, Greater Noida, Uttar Pradesh. The study protocol was duly reviewed and approved by the Institutional Ethical Committee. All the subjects recruited in the study were explained about the study, and a written informed consent was taken. The presence of gingival recession was recorded by using Sullivan and Atkins Classification 1968.¹⁰

Following known etiological factors of gingival recession were evaluated:

1. Subgingival restorations /crowns.
2. Alignment of tooth (labial/lingual)
3. Fremitus test.
4. Brushing technique
5. Type of dentrifice used
6. Local irritating factors (deposits, calculus)
7. Age.
8. Tooth Location
9. Tobacco consumption in any form.

Inclusion Criteria :

1. Systemically healthy patients
2. Patients within range of 18-65 years old.

Exclusion criteria-

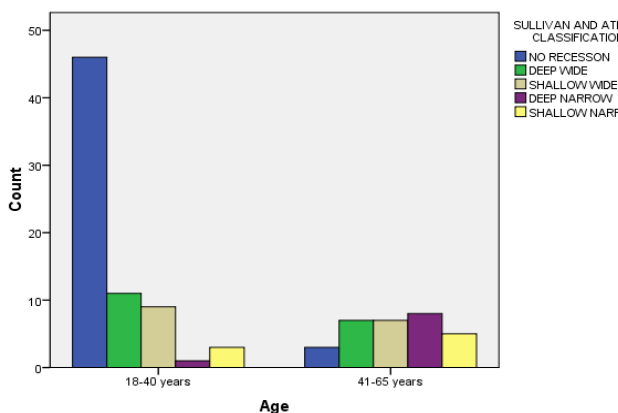
1. Patients with conditions like Diabetes, hypertension, and other diseases known to affect periodontal status.
2. Pregnant and lactating women.

Statistical analysis :The analysis was carried out using software Version 20 and Chi square test were used for statistical analysis and clinical records development

Results & Discussion: Finding of study has been show in Figure 1 to 9 Below. Epidemiology is a useful tool in establishing a need for treatment or for preventive intervention. This study was designed to evaluate the prevalence of gingival recession and risk indicators in a randomly assigned population of Greater Noida District-GautamBudh Nagar. A total of 51% subjects that were recruited in the study exhibited gingival recession.

34.3% of patients with age group 18- 40 were found to display gingival recession, most common type of recession being deep wide (15.7%) on the other hand ,90% subjects examined with age group 41-65 exhibited gingival recession, reflecting a trend of increase in prevalence of gingival recession with increase in age. Most common type of recession was deep narrow.(26.7%) (Figure 1).

Figure 1: Demographic distribution of age with gingival recession classified by Sullivan and Atkins



Higher frequency of gingival recession was seen in males (72%) compared to females. (28%)(Figure-2). Orban, in a similar study suggested that gingival recession resulted from

the apical shift of the epithelial attachment and was a physiologic phenomenon of aging.¹¹

Figure 2: Sullivan and Atkins classification of gingival recession with gender distribution

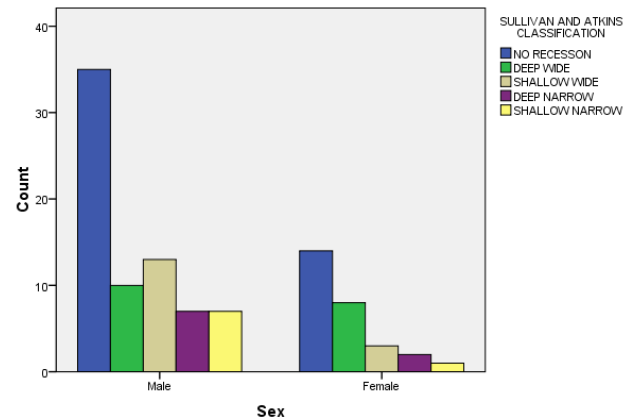


Figure 3: Correlation between subgingival restorations and crowns and gingival recession

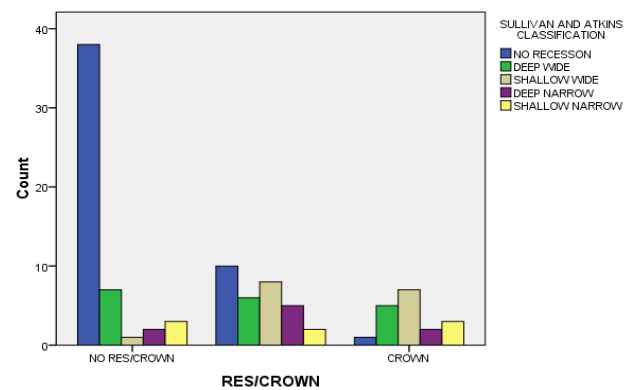
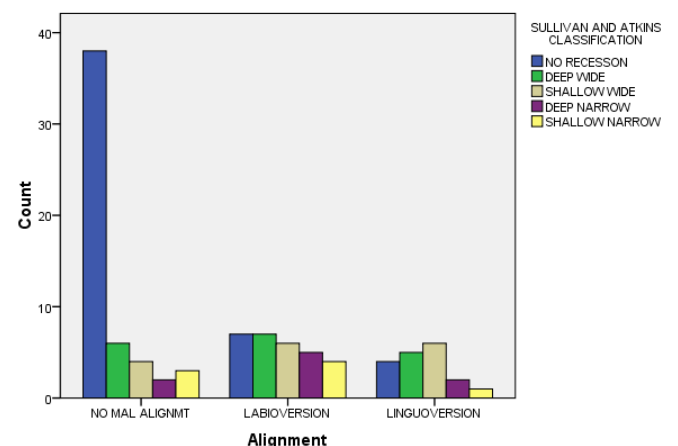


Figure 4: Correlation between alignment of tooth and gingival recession



The finding of the present study that gingival recession is more prevalent in males compared to females is consistent with similar results in other populations.^{12,13,14} Ainamoet *al.*¹⁵ on the other hand suggested that gingival recession was equally common in both the genders in 17 years age group. This association between the gingival recession and age may probably be because of the greater period of exposure to the agents that

cause gingival recession¹⁶, associated with intrinsic changes in the organism, both local and systemic, besides the cumulative effects of the lesion.¹⁷

Figure 5: Correlation between fremitus test and gingival recession

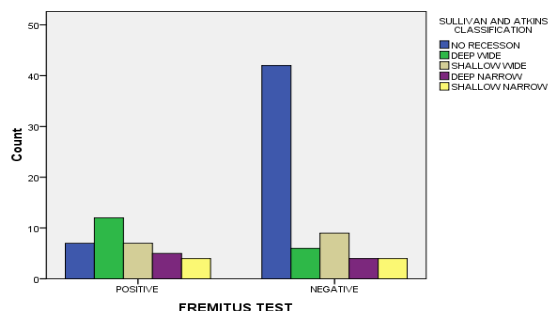
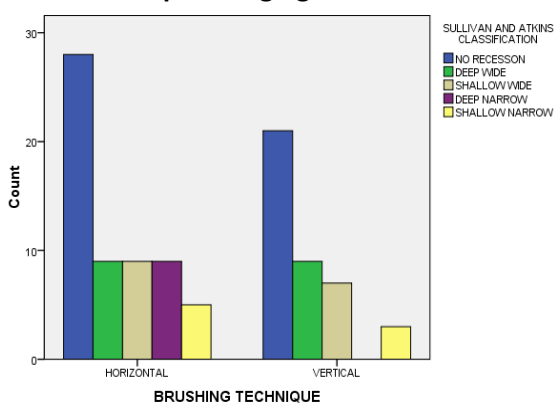
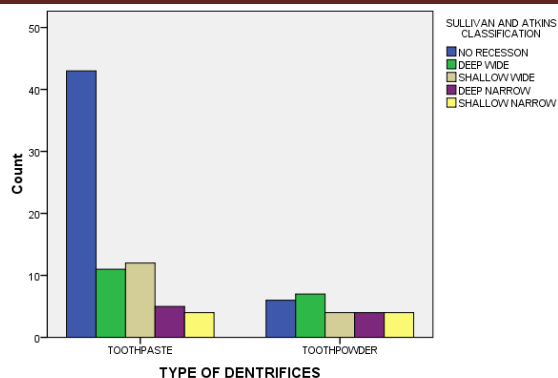


Figure 6: Correlation between brushing technique and gingival recession



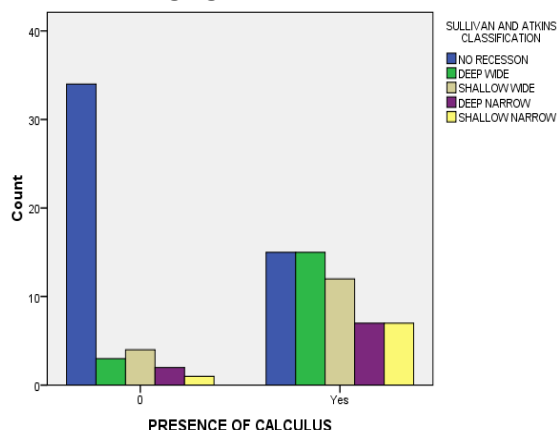
In the present study 70.3% of subjects with sub or supragingival calculus displayed gingival recession. Even though dental calculus has noxious effects onto the periodontal tissues, especially because of the extra retention it provides to the accumulation and calcification of dental plaque and subsequent periodontal destruction as indicated by the gingival recession, its presence at sites with gingival recession is presumed to be a consequence rather than a cause of root surface exposure, since surfaces with gingival recession are less favourable to self-cleansing than those without such changes.¹⁸

Figure 7: Correlation between type of dentrifices and gingival recession



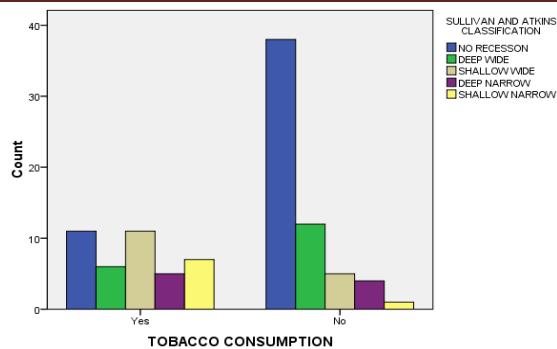
Mal-aligned teeth showed greater prevalence of gingival recession which was in accordance with a study by Hirschfeld (1923)¹⁹ who studied the problem of mal-positioned teeth in human skulls. He concluded that the buccal plate of bone was either thinned considerably or entirely lacking when a tooth was tilted. As a result of this thinning the marginal gingiva lost support; pressure beyond normal, such as strenuous toothbrushing, caused a rapid recession of the gingiva.

Figure 8: Correlation between calculus and gingival recession.



In the present study a strong association was found between smoking and gingival recession (72.5%). Although there is sufficient evidence in the literature stating a strong association between cigarette smoking and gingival recession^{20,21} there has been some inconsistency with regard to the reported pattern of relationship between smoking and gingival recession. Some studies have used cross-sectional and case-control study design and reported a positive relationship between smoking and recession.^{22,23,24}

Figure 9: Correlation between tobacco consumption and gingival recession.



In the present study, subjects using horizontal method of toothbrushing showed a greater prevalence of gingival recession (63.3%) compared to vertical method of brushing (47.5%) Previous studies have reported similar observations. Vigorous and forceful use of hard and medium stiff bristled brushes in a horizontal direction can cause minor lacerations, contusions or abrasions of the gingiva with the resultant cleavage detachment or atrophy of the same as well as resorption of the underlying alveolar plate which lead to gingival recession.²⁵

The present study intends to evaluate the probable etiological factors associated with gingival recession. Age, tobacco consumption, positive fremitus test (trauma from occlusion) and sites with presence of subgingival restoration , crowns , calculus, patients using horizontal strokes of brushing and toothpowder displayed greater prevalence of gingival recession. Dodwad (2001)²⁶ concluded that the etiology of gingival recession is multi-factorial like faulty toothbrushing, tooth malposition, tobacco consumption , frenal pull, habits, poor oral hygiene, etc., with one factor being associated with the other.

Though the distribution pattern of gingival recessions may provide significant indication of the main etiologic factor involved, it is not conclusive in identifying the cause of gingival recession, they must be correlated with several data before arriving at final diagnosis. This is not always simple and is often done through exclusion of the predisposing and precipitating factors that might be involved. Moreover, an association of these factors frequently leads to the occurrence of gingival recession, and therefore one factor may be the main, but not the only aspect leading to the gingival recession.

Conclusion: More than half of the patients examined exhibited gingival recession. The information collected through the study could

probably help in formulating long-term strategies to prevent the occurrence of gingival recession and enable us to predict the rate of success of therapeutic manouvers. In addition to the ones mentioned in this study, there are few more implicating factors such as gingival biotype, chemical trauma, lack of function in the initiation of gingival recession that have not been considered here. The etiology of gingival recession is multifactorial, and its appearance is always the result of more than one factor acting together. At the community level, adequate awareness and education in terms of oral hygiene maintenance should prove to be fruitful in long run and could prove to be effective in prevention of this functionally and esthetically compromised situation.

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