

## Prevalence of Gingival recession in Dental college students: A Clinical investigation

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### Abstract

Gingival recession is the exposure in the roots of the teeth caused by a loss of gum tissue and/or retraction of the gingival margin from the crown of the teeth. Gingival recession is considered as an early expression of periodontal disease and may result in exposure of root surface which may result in hypersensitivity and in some loss of aesthetics. The objective of the present study was to quantify, analyze and find the prevalence and severity of gingival recession in dental college students and also identify risk factors. Clinical examination was performed by a single examiner on a total number of 107 subjects, which included 62 males and 45 females. Results from the study indicate that Gingival recession was more in males as compared to females. It was also found from the present study that Gingival recessions increased with age and presence of poor oral hygiene coupled with use of hard tooth brushes contributed to its severity.

**Key words:** Gingival recession, Periodontium, bacterial plaque

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### 1.0 Introduction

Gingival recession, commonly observed in adult subjects, has been defined as a clinical condition in which the marginal periodontal tissue is located apical to the Cemento-Enamel Junction (CEJ) with concomitant exposure of the root surface [1]. Gingival recession can be localized or generalized and often be associated with one or more surfaces [2]. The presence and extent of gingival recession was also found to increase with age [3]. The definite etiology of gingival recession is yet unclear, but factors which may play a significant role in the occurrence of gingival recession such as Anatomical, Pathological and Physiological factors. Anatomical factors include fenestration, dehiscence of the alveolar bone, altered path of eruption of the tooth and individual tooth shape [3]. Physiological factors may include the orthodontic movement of teeth to positions outside the labial or lingual alveolar plate which are leading to dehiscence formation [4]. Some other factors causing gingival recession include the plaque and gingival inflammation and traumatic Occlusion the height range of mucosal tissue and adjacent bone [5]. The frequency of gingival recession increased with age and was greater in men than in women of the same age [6]. Parffit Mjor [7] demonstrated that in the teeth that were misaligned were difficult to clean and hence there was more accumulation of bacterial plaque and gingivitis consequently higher prevalence of recession was found in such areas of mouth. Trott and Love [8] found that 25.5% of cases of lower incisor with recession were due to dental misalignment

allowing accumulation of plaque and debris. Trossello and Gianelly [9] majority of patients with orthodontic treatment were aware of oral hygiene and they developed habits of brushing vigorously and aggressively resulting in gingival recession. Occlusal trauma is also one of the most common factors for gingival recession According to Lindhe [10].

### 2.0 Materials and methods

The sample consists of total of 107 patients within age group 20 – 35 years old, selected from the students of the RKDF Dental College and Hospital, Bhopal. The selection criteria were age above 20 years and below 40 years and No history of significant dental treatments and free from any underlying systemic disorders. All the participants were informed on the evaluation to which they would undergo and they voluntarily submitted and signed an informed consent for participation in the study. The Study was approved by the College Ethics committee. A millimeter graduated periodontal probe marked up to 15mm, Color Coded Probe, code model CP-15UNC-PCPUNC15, Hu-Friedy was used for evaluation of the teeth of each subject by the same examiner to avoid intra examiner differences, the presence of gingival recession was recorded whenever there was more than 1mm of root surface exposed. All four surfaces were evaluated in each tooth: mesial, buccal, distal and lingual, and linear measurements were obtained from the cemento-enamel junction up to the gingival margin in the teeth presenting with gingival recession, in order to evaluate the vertical (apico-coronal) width of the recession.

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The recessions were further scored according to the system suggested by Miller in 1985 [11]. The patients were also informed on their oral status and diagnosed periodontal problems at the end of examination.

### 3.0 Results and discussion

The age and sex distribution of the patients the following: total number of males were 62 and total number of females were 45 and most of the individuals (57%) were from 20 -25 years age group which is quite obvious that this is the predominant age group which is present in the colleges and total number of cases was 107 as shown in table-1.

Age Group	Males	Females	Total
20- 25	39	22	61 (57%)
26- 30	15	18	33 (30.85%)
31- 35	8	5	13 (12.15%)
<b>Total</b>	<b>62</b>	<b>45</b>	<b>107 (100%)</b>

**Table-1: Distribution of cases**

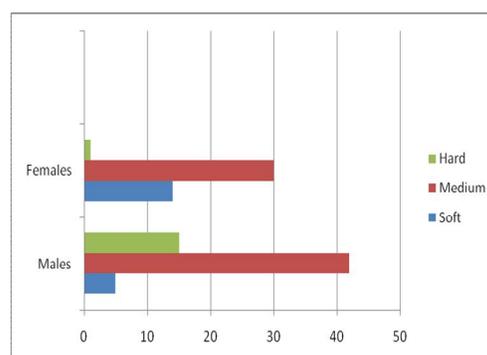
Each individual was checked as per protocol and number of recessions were recorded and tabulated as shown in the table-2. Where as the total number of recessions recorded was more in the 20 -25 years age group 102 recessions (44.74%) the actual number of recessions were more in the age group when number of individuals are compared the 31 – 35 year age group had only 13 individuals but number of recession recorded were 46 which gives an average of 3.54 recession per individual. When the same is compared to the younger age group

20 – 25 it gives a total of 1.67 recessions per individual and the age group of 26 -30 showed 2.12 recessions per individual which makes it quite clear as the age is increasing the number of recession were increasing. The same with age and sex distribution is being depicted in the table-2.

Age Group	Males	Females	Total
20 – 25	63	39	102 (44.74%)
26 – 30	42	28	70 (30.70%)
31 – 35	31	15	46 (20.18%)
<b>Total</b>	<b>136</b>	<b>92</b>	<b>228 (100%)</b>

**Table-2: Number of recession age wise in males and females**

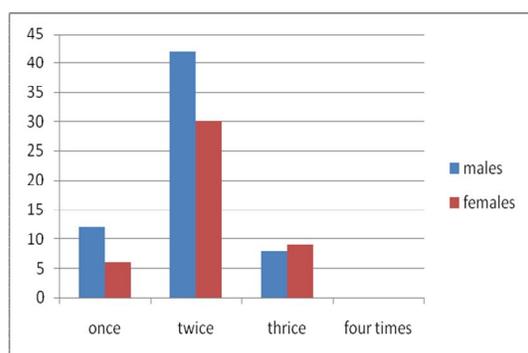
The type of tooth brushed used by the individuals was also recorded it was shown that the females tend to use soft to medium brushes mostly where as the males were using hard tooth brush commonly and it was also shown that more number of recessions were occurring in males 59.65% of total 228 recessions occurred in males and rest in females the values are shown in the figure-1.



**Figure-1: Type of tooth brush used**

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Frequency of brushing also has an impact on amount of recession the frequency of brushing of both males and females was recorded where as most of the individuals used to brush twice daily and only 36 individuals 33.64% used correct technique of brushing others were using the scrub technique of brushing shown in the Figure-2.



**Figure-2: Frequency of brushing**

Width of the attached gingiva is an important consideration because it is seen that as there is recession the width of attached gingiva goes on decreasing 34.58% had width of attached gingiva more than 4mm and most 53.27% of the individuals were having width of attached gingiva in the range of 2- 4mm shown in the table-3.

Attached Gingiva	A	B	C
> 4mm	16	21	37 (34.58%)
2- 4 mm	39	18	57 (53.27%)
< 2mm	7	6	13 (12.15%)
<b>Total</b>	<b>62</b>	<b>45</b>	<b>107</b> (100%)

A - Males, B- Females, C-Total percent

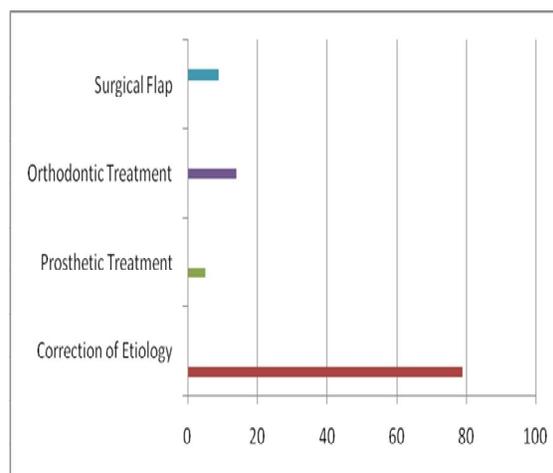
**Table-3: Width of Attached Gingiva**

Extent of recession were also evaluated and 77 recessions were < 2mm and 82 recessions falls in the category of 2 - 3 and 51 recession were in the range of 3 - 4 mm only 18 recessions were showing the extent of greater then 4 mm shown in the table-4.

Recession	Males	Females	Total
< 2 mm	18	59	77
2 - 3 mm	69	13	82
3 - 4 mm	36	15	51
> 4mm	13	5	18
<b>Total</b>	<b>136</b>	<b>92</b>	<b>228</b>

**Table-4: Extent of recession**

Following the examination and diagnosis treatment plan was devised 79 persons received etiological treatment which involves correction of brushing use of proper brush and oral prophylaxis. About 5 individuals also underwent additional prosthodontic treatment similarly 14 individuals underwent orthodontic treatment and surgical periodontal treatment was undertaken 9 individuals shown in figure-3.



**Figure-3: Treatments done**

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The study included students of dental college who were examined for gingival recession. The aim was to evaluate the presence of gingival recession in Dental College students. Among the total number of individuals seen  $n=107$ , 62 were males and 45 were females. The age group involved 20 -35 years which is a mix of young and slightly older individuals which gives an opportunity to evaluate both at a time within the same setup. The most common etiological factor as evolved in various researches in literature was the presence of Dental Plaque [12, 13]. Local irritative factors and oral hygiene are important contributors to the gingival recession [13,14]. The type of brush employed and hardness of bristles also contributed to gingival recession [13]. Therefore a complete evaluation of type of tooth brush used was employed where as 24.19% males used hard brush which may be due to the fact that for males soft tooth brush gave less satisfaction of clean oral cavity as compared to hard tooth brush females 2% used hard brushes most of the females used brush with medium hardness and soft tooth brush was employed by 31% females and 8% males. All of them used manual tooth brushes. As to comparison of the tooth brush used and number of recession it is clear that there were more number of recessions observed when harder tooth brush was employed. The same was reported by Wilckens et al who observed that the gingival recession was proportional to the hardness of the tooth brush [15].

The amount of attached gingiva was analyzed 53.27% had the width in the range of 2 -4 mm and only 12.15% had the width of attached gingiva less than 2 mm. Studies have reported that No significant correlation was found between gingival recession and width of attachedgingiva [16]. The lack of an "adequate" zone of attachedgingiva does not result in an increased incidence of soft tissue recessions [17]. The size of recession when analyzed shown < 2mm recession in 77 areas and 2 – 3 mm recession in 82 areas and 3 -4 mm recession in 51 areas and > 4 mm recession in 18 areas. As per Miller's classification [11] 69.43% belong to I and II and remaining belong to class III No case of Class IV was discovered in this group of individuals. As for the treatment aspect correction of etiological aspect was advised in 79 areas and prosthetic treatment was done in 5 areas and Orthodontic Therapy was advised in 14 areas and surgical flap procedure was undertaken in 9 areas.

### 4.0 Conclusion

The occurrence of gingival recession is a complex process with multiple etiological factors which includes the presence of plaque, oral hygiene status and type of periodontium, type of frenum all contribute to its origin. Within the limitation of the present study it was found that gingival recessions increased with age and presence of poor oral hygiene coupled with use of hard tooth brushes contributed to its severity.

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