PREVALENCE OF GINGIVAL RECESSION IN LOWER ANTERIORS IN CHILDREN OF 9-17 YEARS OF AGE

[1]B.Sadhvi, [2*]Dr.Shantha Sundari.K.K, [3]Dr Prasanna Arvind

[1]Saveetha Dental College and Hospital Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai- 77

[2*]Professor, Department of Orthodontics, Saveetha Dental College and Hospital Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai- 77

[3]Assistant Professor, Department of Orthodontics, Saveetha Dental College and Hospital Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai- 77

Corresponding author,
Dr.Shantha Sundari.K.K,
Professor, Department of Orthodontics, Saveetha Dental College and Hospital Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai- 77

ABSTRACT

AIM: The purpose of this study was to evaluate the predominance of gingival downturn in lower front areas in offspring of 9-17 years old.

BACKGROUND: Gingival recession is the apical movement of the marginal gingiva from the cemento-enamel intersection and its etiology is varied. It is said to be caused due to periodontal disease, trauma from occlusion, improper brushing, frenal pull etc. The commonly associated factors of gingival recession differ in different age groups as mentioned in previous studies. In children, the more commonly associated factors are crowding, deep bite and other orthodontic anomalies whereas in adults the more commonly associated factors are said to be periodontal disease and abnormal frenal pull. In this review, the commonness of gingival recession in lower foremost regions has been concentrated on in young children of 9-17 years old among a populace of patients visiting a dental college in South India.

MATERIALS AND METHODS: A cross-sectional review was led utilizing patient records from Saveetha Dental College, Chennai after surveying and analysing the information of 74092 patients between June 2019 and March 2021. Microsoft Excel® was utilized to organize the information. The factors included were orientation, age gathering, and factors related with gingival recession. Information was then sent out to the Statistical Package for Social Sciences (SPSS) for Windows (Version 19, 2010) for additional examination.

RESULTS: The same size was 786. Sample had an age appropriation of 7% youngsters and 93% grown-ups. Out of the children, about 23.3% of the children between age 9-17 years had gingival recession in the lower anteriors. gender distribution among the adults was found to be 41.61% males and 58.39% females. The commonly associated factors of gingival recession among children was malocclusion followed by faulty tooth brushing and plaque accumulation. About 65.45% of them had a recession involving one to two teeth, and about 34.55% of them had recession involving the entire sextant, out of which 94.66% of them had Miller's type I gingival recession.

CONCLUSION: Within the limits of the study, gingival recession was more common among females than males, increases along with age and is more common in single or two teeth among paediatric patients. Further, Miller's

type I gingival recession was most common among the children of 9-17 years of age and was due to factors such as malocclusion and faulty tooth brushing that can be corrected. Hence, gingival recession should be corrected during its early stages thereby promoting the sound health of the oral cavity.

KEYWORDS: Gingival recession, poor oral hygiene, innovative, malocclusion, Miller's classification, high frenal attachment.

INTRODUCTION

Gingival recession, or apical migration of the marginal gingiva (1), is caused by a few factors. Baker and Seymour(2) proposed plaque-induced inflammation as a major cause of gingival recession in a historical study. Age, calculus, high frenal attachment, and bleeding on probing were identified as determinants of gingival recession in Nigerians. Age and frenal attachment were two of the many factors that influenced the prevalence and severity of gingival recession.(3)Gingival recession is uncommon in paediatric patients(4), and when it occurs, it is more common in the mandibular incisor region. Mathur et al. reported a prevalence of 18%(5) in an extensive survey of recession in mandibular central incisors of 1800 children, with no differences in prevalence by age or gender. The presence of recession is significantly associated with frenal attachment (the thin variety). In the literature, there is a lingering debate about possible causes of recession. One school of thought completely rejects the existence of "true" childhood recession. Woofter coined the term "apparent" gingival recession to describe this condition. (6) He dismissed recession in children as merely a delayed maturation of the gingival cuff of the adjacent paired tooth, rather than a "true" recession of the affected tooth - an observation devoid of scientific support.(7)

The role of high frenal attachment and associated gingival margin retraction during normal oral function, as observed in previous studies, is of particular interest. (8,9) Localized gingival recession can be a problem in children, and the aetiology and pathogenesis of such defects are not well understood. Sognnaes RF (10) discovered a link between gingival recession and factors such as improper tooth brushing technique (gingival abrasion), incorrect tooth positioning, soft tissue friction (gingival ablation), gingival inflammation, and high frenum attachment. Occlusion trauma has also been proposed, but its mechanism of action has never been demonstrated. In monkeys, orthodontic tooth movement in the labial direction resulted in the loss of marginal bone and connective tissue attachment, as well as gingival recession.(11)

Gingival recession, according to Baker and Seymour (2), is caused by plaque-induced inflammation. Stoner and Masdyasna (12) discovered no link between calculus and gingival recession, but it was related to the width of keratinized gingiva. Kishore et al. (13) discovered that gingival recession was more common in younger girls and equally prevalent in both age groups.

Woofter (6) believes that recession is a physiological process associated with ageing. There is some debate about whether gingival recession (14) can be diagnosed with certainty before the age of 12 years, and it has been suggested that apparent recession in younger children was caused by a delay in the maturation of the gingivae of adjacent paired teeth rather than true recession of the gingivae of the apparently affected tooth. However, there has never been convincing evidence for a

physiological shift (15) of the gingival attachment.

According to Fermin A. Carranza (16), the gradual apical shift is most likely caused by the cumulative effect of minor pathologic involvement and/or repeated minor direct trauma to the gingiva.

Gingival recession is clinically significant due to a few factors. Caries can form on exposed root surfaces. The erosion of the cementum exposed by recession exposes an underlying dentinal surface that is extremely sensitive, especially to touch. Exposure of the root surface may also result in pulp hyperemia and associated symptoms. (17) Interproximal recession makes room for plaque, food, and bacteria to accumulate. Miller's classification has been proposed to assess the prognosis of root coverage after grafting. The author confirms that the recession class is a predictor of complete root coverage (Classes I and II), partial root coverage (Class III), and no root coverage (Class IV). Our team has extensive knowledge and research experience, which has resulted in high-quality publications(18-37). The purpose of the study was to determine the prevalence of gingival recession among hospitalised children.

MATERIALS AND METHODS

STUDY DESIGN AND SETTING

This is a retrospective cross-sectional study that obtained patient records from Saveetha Dental College in Chennai after reviewing and analysing the data of 74092 patients. Data was collected for patients diagnosed with gingival recession who presented to the hospital between June 2019 and March 2021.

DATA COLLECTION

Saveetha Dental College patient records were used to identify 786 cases of gingival recession in the mandibular anterior region. Other pertinent information, such as the cause of the recession, gender, patient ID, patient name, and so on, was also recorded. Patient data that was repeated and incomplete records were excluded. The location of gingival recession was confirmed using clinical photos and radiographs. An external reviewer also verified the data.

STATISTICAL ANALYSIS

After properly coding the variables involved, data was recorded in Microsoft Excel® and later exported to the Statistical Package for Social Sciences. Gender (1. Male, 2. Female) and age group were among the variables included (1. 9–12 year-olds, 2. 13-15 year olds 3. 15-17 year olds), Miller's recession classification (1. Class I, 2. Class II, 3. Class III) and recession cause (1. Dental plaque accumulation, 2. High frenal attachment, 3. Malocclusion, 4. Reduced attached gingiva, 5. Habits) 6. Occlusion trauma, 7. Improper tooth brushing Following that, the data was statistically analysed using the Statistical Package for Social Sciences (SPSS) for Windows (Version 19, 2012). Using the same software, appropriate graphs, tables, and charts were created to clearly represent the results obtained.

RESULTS AND DISCUSSION

The sample size was 786. Sample had an age distribution of 7% children and 93% adults. Out of the children, about 23.3% of the children between age 9-17 years had gingival recession in the lower anteriors. Frequencies of various age groups of patients who had gingival recession revealed that about 21.82% of the patients

were 9-12 years, 27.27% of them were 13-15 years, and 50.91% of them were 16-17 years (Graph 1). Frequencies of males and females who had gingival recession revealed that About 41.61% Males and 58.39% of the females showed gingival recession (Graph 2). Frequencies of various sextants involved in gingival recession revealed that about 65.45% of them had recession involving one to two teeth, and about 34.55% of them had recession involving the entire sextant (Graph 3). Frequencies of gingival recession according to Miller's classification revealed that 94.66% of them had Miller's type I gingival recession, 4.67% had Miller's type II recession and about 0.67% had Miller's type III gingival recession (Graph 4). Frequencies of various etiologic factors involved in gingival recession showed that about 20.00% of them had a recession due to dental plaque accumulation, 0.67% due to habits, 4.67% due to inadequate attached gingiva, 23.33% due to faulty tooth brushing, 7.33% due to occlusal trauma, 10.67% due to high frenal attachment and about 33.34% of them had recession due to malocclusion (Graph 5). Association of gingival recession among various age groups and gender revealed that among males, about 14.55% had recession under 9-12 years of age, 9.09% had recession under 13-15 years of age and about 23.64% of them had recession under 16-17 years of age. Among females, about 7.27% had recession under 9-12 years of age, 18.18% had recession under 13-15 years of age and about 27.27% of them had recession under 16-17 years of age (Graph 6). Association of gingival recession among various sextant and gender revealed that among males, about 30.91% had a recession involving one or two teeth, and about 16.36% of them had a recession involving the entire sextant. Among females, about 34.55% had a recession involving one or two teeth, and about 18.18% of them had a recession involving the entire sextant (Graph 7).

According to a 2015 study by Mythri S et al, females had a higher frequency of gingival recession (60.5%) than males (39.5%). Gingival recession was found in 43.0% of mandibular incisors. Miller's class I gingival recession was the most common. The most common cause of gingival recession (44.1%) was dental plaque accumulation, followed by improper tooth brushing (42.7%).In this respect, the authors' findings agree with the results of this research. (38) Koppolu Pradeep et al. (39) found that gingival recession was common in one or two teeth due to trauma or frenal attachment in paediatric patients whereas generalised recession was less commonly seen. The same result is found in the present study.

Similarly, J.M Albandar et al. (40) discovered that gingival recession increased with age due to other factors such as poor brushing and plaque accumulation in growing adults in his study. These findings are consistent with ours, even though adults were not included in the current study.

Limitations of the study are the non-inclusion of some data in the study that were unclear of certain reporting parameters. There were no restrictions on external validity. All the included studies were carried out in university clinics with a single operator, and the results were evaluated by experts with little disagreement. As a result, the findings of this study may be generalizable. However, the drawback of the current study is the small sample size. A larger study with more patients, in patients with different stages of

gingival recession under various age groups needs to be conducted.

Future prospects of this study includes overcoming the limitations and emphasis on knowledge and association of gingival recession among paediatric patients with various parameters, as it is essential for a dental practitioner. This study is provided to help clinicians improve their knowledge of gingival recession and their understanding of the controversial issues surrounding the effects of gingival recession to help reduce patient risks. Finally, clinicians should inform their patients about the potential changes that may occur because of gingival recession, as well as the periodontal therapies that are available to treat the condition.

CONCLUSION

Within the limits of the study, gingival recession was more common among females than males, increases along with age and is more common in single or two teeth among paediatric patients. Further, Miller's type I gingival recession was more common among the children of 9-17 years of age and was due to factors such as malocclusion and faulty tooth brushing that can be corrected. Hence, gingival recession should be corrected during its early stages thereby promoting the sound health of the oral cavity.

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CONFLICT OF INTEREST

The authors declare that they have no potential conflicts of interest.

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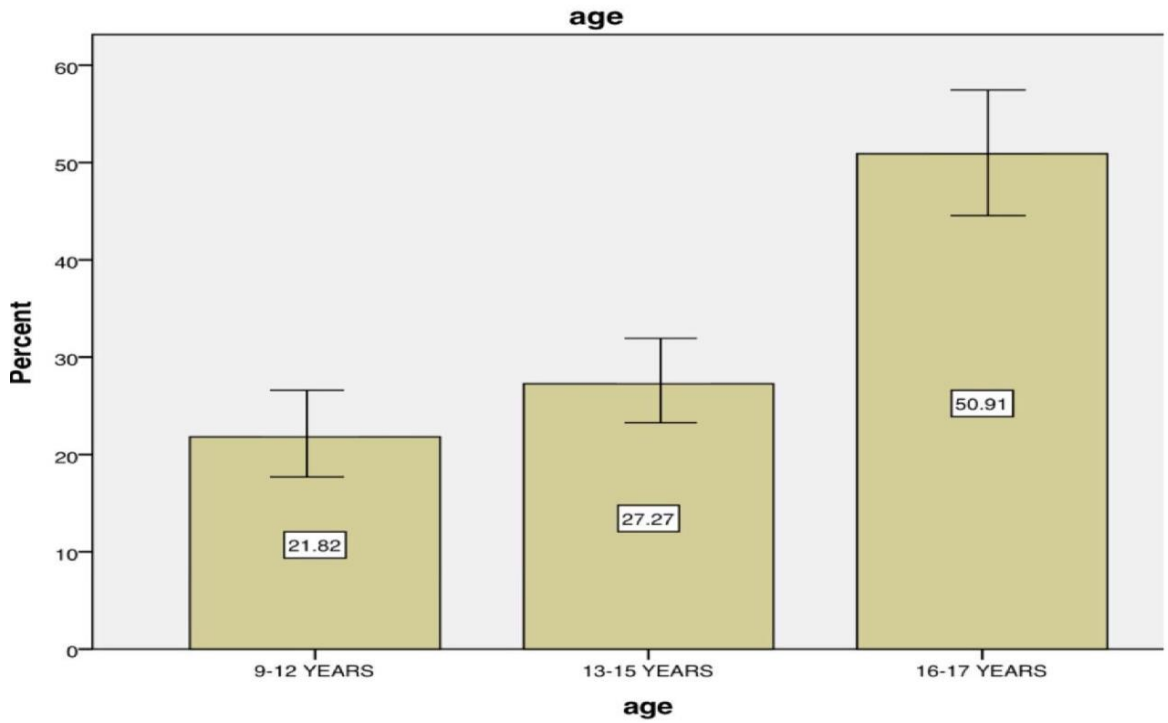
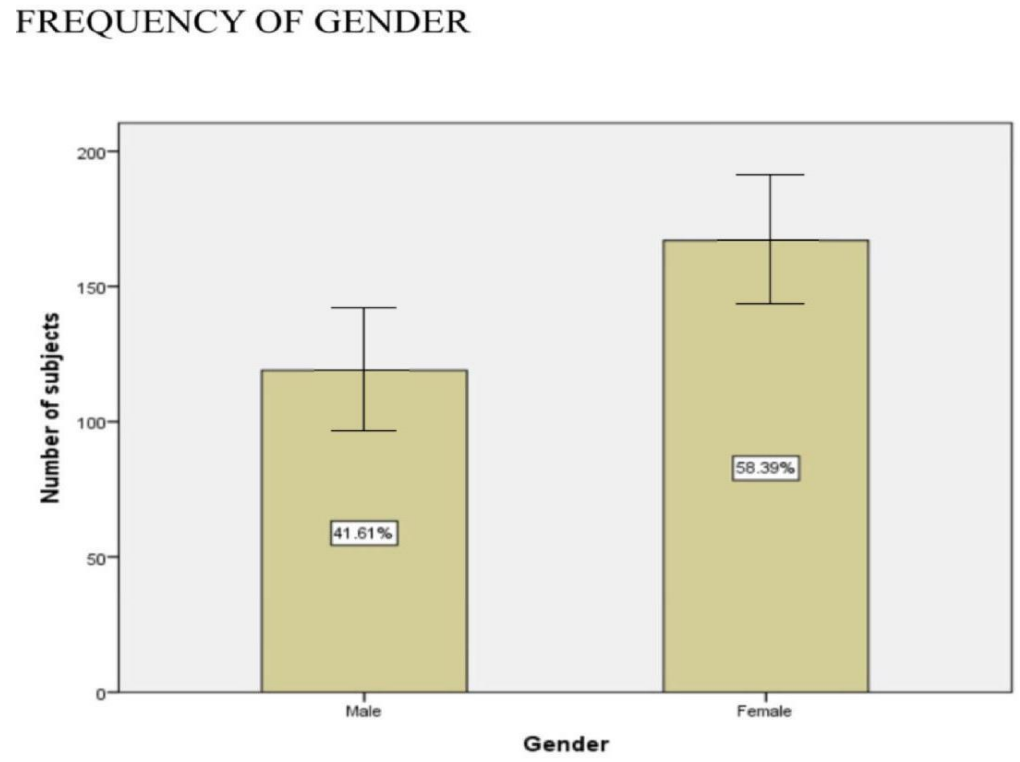
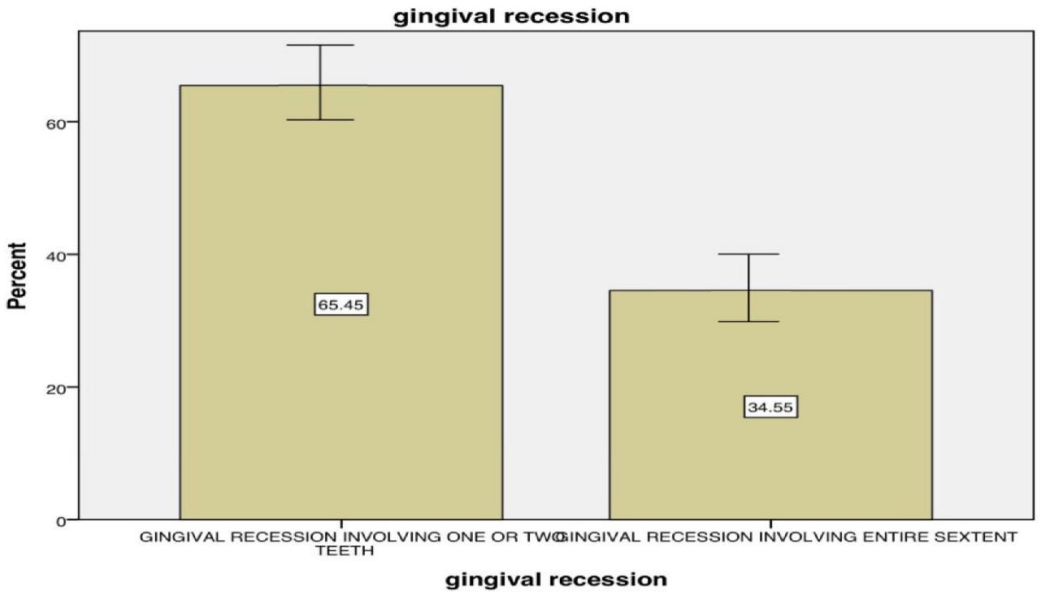


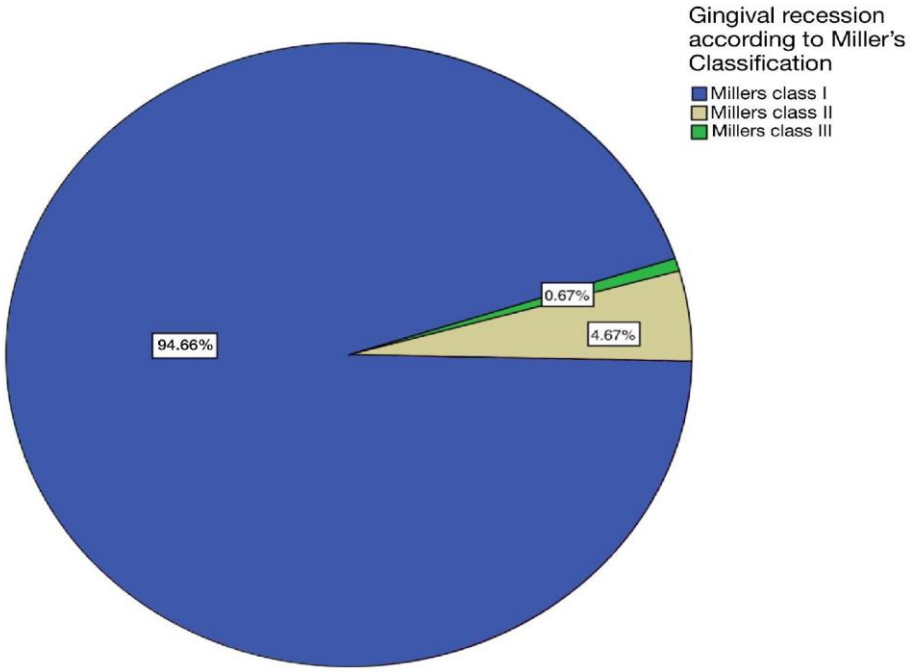
Graph 1- Bar graph representation of frequencies of various age groups of patients who had gingival recession - x axis represents various age groups and y axis represents the percentage of patients who had recession on a scale of 1-100. From the figure, 21.82% of the patients were 9-12 years, 27.27% of them were 13-15 years, and 50.91% of them were 16-17 years.



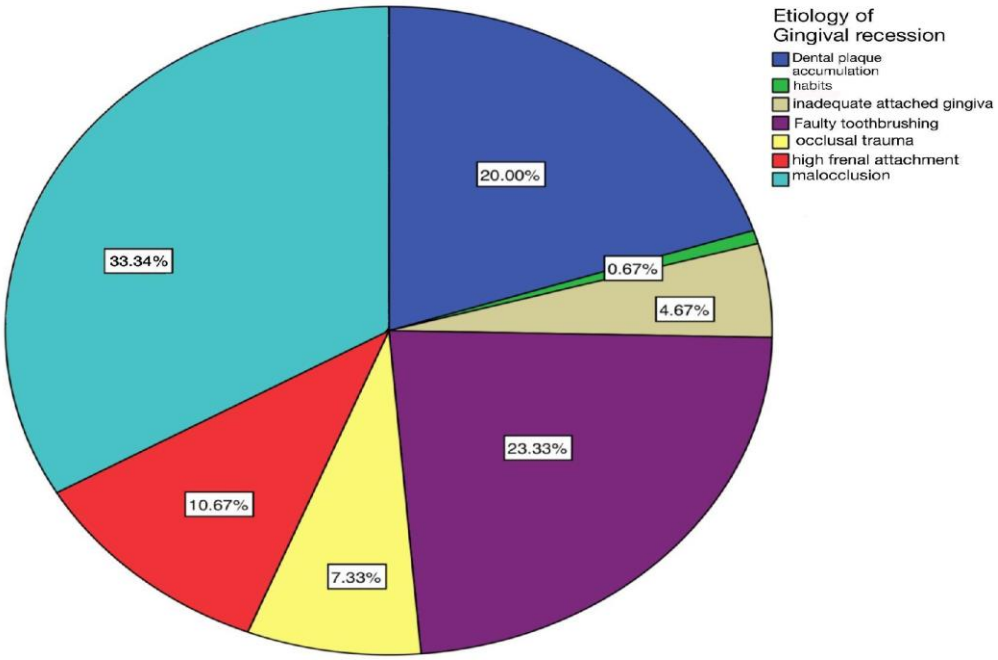
Graph 2- Bar graph representation of frequencies of males and females who had gingival recession - x axis represents gender and y axis represents the percentage of males and females who had gingival recession on a scale of 1-100. About 41.61% Males and females 58.39% of the females showed gingival recession



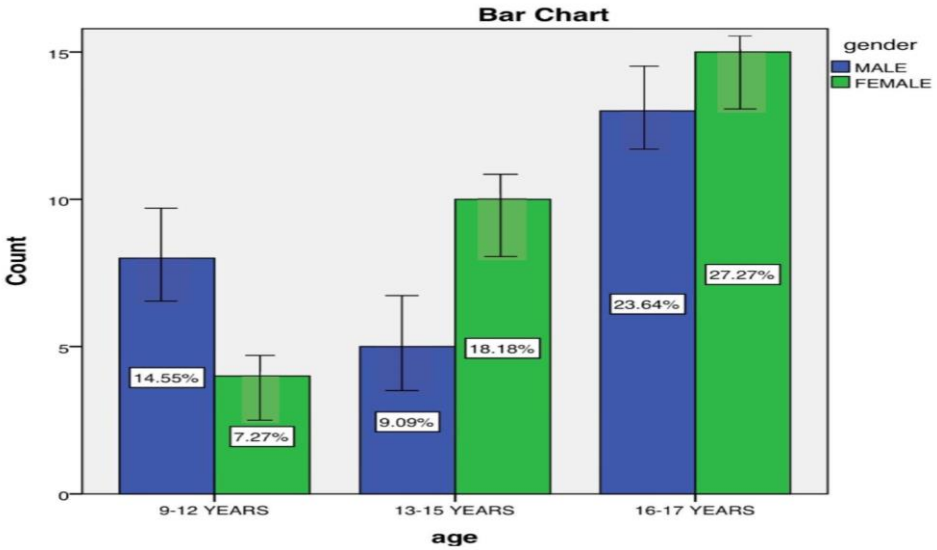
Graph 3- Bar graph representation of frequencies of various sextants involved in gingival recession - x axis represents various sextants and y axis represents the percentage of patients having gingival recession in the respective sextants on a scale of 1-100. About 65.45% of them had a recession involving one to two teeth, and about 34.55% of them had recession involving the entire sextant.



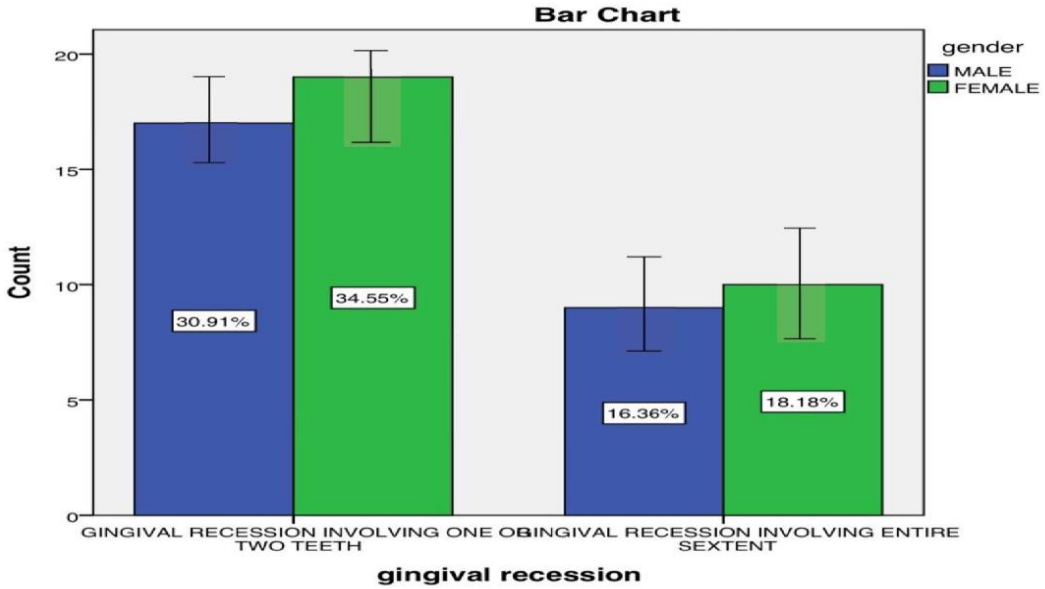
Graph 4- Pie chart representation of frequencies of gingival recession according to Miller's classification. About 94.66% of them had Miller's type I gingival recession, 4.67% had Miller's type II recession and about 0.67% had Millers type III gingival recession.



Graph 5- Pie chart representation of frequencies of various etiologic factors involved in gingival recession. About 20.00% of them had a recession due to dental plaque accumulation, 0.67% due to habits, 4.67% due to inadequate attached gingiva, 23.33% due to faulty tooth brushing, 7.33% due to occlusal trauma, 10.67% due to high frenal attachment and about 33.34% of them had recession due to malocclusion.



Graph 6- Bar graph representation of the association of gingival recession among various age groups and gender - x axis represents the age groups and y axis represents the percentage of males and females having gingival recession on a scale of 1-100. Among males, about 14.55% had recession under 9-12 years of age, 9.09% had recession under 13-15 years of age and about 23.64% of them had recession under 14-17 years of age. Among females, about 7.27% had recession under 9-12 years of age, 18.18% had recession under 13-15 years of age and about 27.27% of them had recession under 14-17 years of age.



Graph 7- Bar graph representation of the association of gingival recession among various sextant and gender - x axis represents the sextant and y axis

represents the percentage of males and females having gingival recession on a scale of 1-100. Among males, about 30.91% had a recession involving one or two teeth, and about 16.36% of them had a recession involving the entire sextant. Among females, about 34.55% had a recession involving one or two teeth, and about 18.18% of them had a recession involving the entire sextant.