



Gingival Recession In The Periodontology Specialist Polyclinic Of The Oral And Dental Hospital, Airlangga University, From January To December 2022

Shafira K Supandi^{1*}, Lambang Bargowo¹, Irma J. Savitri¹, I Gusti Agung A Putra², Adendra A. Fathurrahman³, Azzahra H. Islamy³

¹ Department of Periodontics, Faculty of Dental Medicine, Airlangga University, Surabaya, Indonesia.

² Periodontology Specialist Study Program, Faculty of Dental Medicine, Airlangga University.

³ Dental Medicine Education Study Program, Faculty of Dental Medicine, Airlangga University.

ARTICLE INFO

Article history:

Received 24 January 2025

Revised 28 January 2025

Accepted 12 February 2025

Published online 01 March 2025

Copyright: © 2025 Supandi *et al.* This is an open-access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

ABSTRACT

The condition known as gingival recession occurs when the gingival margin migrates apically from the cemento-enamel junction, exposing the tooth root surface. In addition to aesthetic issues, gingival recession can result in a number of pathological issues, including dentin hypersensitivity and cavities on the surface of the tooth root. Gingival recession is thought to have a complex etiology, meaning multiple factors frequently contribute to its onset. This study aims to determine the prevalence of gingival recession based on age and gender among patients visiting the Periodontics Specialist Polyclinic at Airlangga University Dental and Oral Hospital. This study aims to gather information on gingival recession occurrence among RSGM Airlangga University patients from January to December 2022. This study employs a descriptive observational research design and utilizes secondary data from the periodontal status records of patients at Airlangga University Dental and Oral Hospital from January to December 2022. Following a descriptive analysis of the data, conclusions were drawn. The results of this study show that, among the 57 samples meeting the inclusion criteria, 24 were male and 33 were female. Gingival recession was more common in individuals aged 45 to 54. Future studies will involve in-depth research on the etiological factors, focus on evaluating the effectiveness of various treatment methods, longitudinal studies to monitor the progression of gingival recession over time.

Keywords: Gingival recession, gender, age, sextan.

Introduction

The apical migration of the gingival margin from the cemento-enamel junction (CEJ) causes gingival recession, which is the exposing of the tooth root surface.¹ Gingival recession can cause a number of pathological conditions, including root surface caries and dentin hypersensitivity, in addition to aesthetic concerns.^{2,3} Gingival recession occurs due to a number of causes, including pathological, physiological, and anatomical, as well as other contributory variables such as incorrect tooth cleaning methods.⁴

Patients with periodontal diseases frequently exhibit gingival recession as a clinical sign. As patients age, gingival recession becomes more common and more severe.² In addition to exposing root surfaces, gingival recession is frequently linked to non-cancerous cervical lesions, dentin hypersensitivity, root caries, unmanaged plaque, and diminished aesthetics.⁵ Gingival recession brought on by persistent stress from bad brushing practices might reveal the root surface. While toothbrush abrasion frequently causes attachment loss in the buccal and lingual areas, bacterially-driven periodontitis typically causes attachment loss in the interproximal area. The space between teeth grows as recession advances, revealing more cementum on the root surface.

The apical border of the oral mucosa usually gets irritated when the disease reaches the mucogingival junction because it is difficult to maintain proper plaque control in this region.² By removing the underlying cause and undergoing periodontal therapy, including non-surgical or surgical methods, gingival recession can return to normal.⁶ The two main objectives of gingival recession treatment are restoring dental aesthetics and getting rid of any symptoms. Gingival recession can be treated with restorative materials, orthodontic treatments, and periodontal surgery. Gingival recession and poor dental health can lead to a lower quality of life, but many patients are unaware of this.⁷

Materials and Methods

From June to December 2023, periodontal medical records from the Periodontics Polyclinic at Dental Hospital Airlangga University were gathered for an observational study. Complete medical records of patients with gingival recession in one or more tooth regions, as well as patients who visited the Periodontics Polyclinic of Dental Hospital Airlangga University between January and December 2022, were required for inclusion in this study. Nevertheless, patients who were under the age of 18, did not have gingival recession, were edentulous in all of their teeth, had incomplete periodontal status or were not signed by the attending physician, patients without a periodontal status card, and patients without medical records were not included (Figure 1).

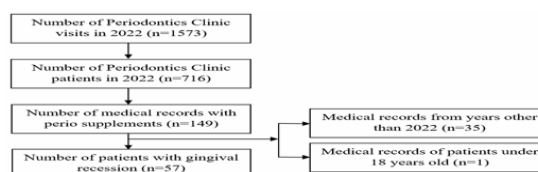


Figure 1. Data collection flowchart

*Corresponding author. E mail: shafira-k-s@fkg.unair
Tel: +62 31 5030255

Citation Supandi K S, Bargowo L, Savitri J I, Putra A A I G, Fathurrahman A A, Islamy H A. Gingival Recession In The Periodontology Specialist Polyclinic Of The Oral And Dental Hospital, Airlangga University, from January to December 2022. Trop J Nat Prod Res. 2025; 9(2): 698 – 701 <https://doi.org/10.26538/tjnpr/v9i2.36>

Official Journal of Natural Product Research Group, Faculty of Pharmacy, University of Benin, Benin City, Nigeria

The sampling procedure employs a total sampling technique, involving the collection of data from all periodontal status in medical records of patients who visited the Periodontics Specialist Polyclinic at Airlangga University Dental and Oral Hospital between January and December 2022, provided they meet the inclusion criteria. This research data is secondary data obtained from periodontal status in medical records of outpatients at the Oral and Dental Hospital, Airlangga University. Secondary data obtained from patients' medical records will be recorded into a questionnaire form containing research variables such as age, gender, teeth with gingival recession. Gingival recession was categorized into male and female patients based on their periodontal status; the patients were between the ages of 18 and 24, 25 and 34, 35 and 44, 45 and 64, and older than 65. Six tooth areas were divided using a sextant: Sextant I (tooth 18, 17, 16, 15, 14), Sextant II (tooth 13, 12, 11, 21, 22, 23), Sextant III (tooth 24, 25, 26, 27, 28), Sextant IV (tooth 38, 37, 36, 35, 34), Sextant V (33, 32, 31, 41, 42, 43), and Sextant VI (44, 45, 46, 47, 48). This study was approved by the University of Airlangga ethics committee with reference number 1/UN3.9.3/Etik/PT/2024.

Statistical Analysis

The Microsoft Excel application was used in this study's data processing method, and the results are displayed as a percentage (%). Descriptive data analysis involves describing the circumstances around the study findings before drawing a conclusion. The Spearman correlation test is used to assess whether or not a relationship exists between the two variables, as well as the strength and direction of the relationship.

Results And Discussion

The study at Oral & Dental Hospital, Airlangga University used 1,573 samples of data from Oral & Dental Hospital, Airlangga University visits in 2022. Medical records with duplicate or multiple entries were subjected to additional data processing, yielding 716 samples. 57 of these patients met the inclusion criteria and were diagnosed with gingival recession out of the 149 individuals whose medical records included periodontal supplements. From January to December 2022, data on gingival recession patients was gathered from the medical records of patients attending the Periodontology Clinic of Oral and Dental Hospital, Airlangga University (Oral & Dental Hospital, Airlangga University).

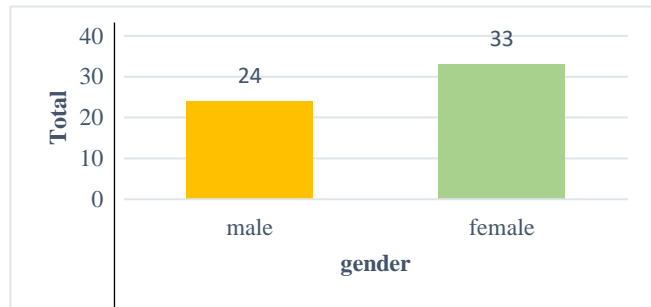


Figure 2. Distribution of Gingival Recession by Gender

Dentin hypersensitivity, cervical tooth wear, pain complaints, poor aesthetics, and the loss of the periodontal tissue's ability to support teeth are just a few of the drawbacks associated with gingival recession that can lower a person's quality of life.⁸ Gingival recession is thought to have a complex etiology, meaning that multiple interacting factors frequently contribute to its occurrence.^{9,10}

Of the fifty-seven patients who experienced a gingival recession, 42.10% were male and 57.90% were female (Figure 2). Female gingival recession was more prevalent than male gingival recession. This is believed to be because, compared to males, women are more driven to maintain good oral hygiene, resulting in frequent tooth brushing. If brushing too hard or incorrectly can damage the gums.¹¹ Literature states that 42.7% of people faulty toothbrushing.¹³ Nevertheless, there is currently insufficient proof to draw firm conclusions about the connection between gingival recession and teeth brushing frequency.⁸ According to a different study, gingival recession was more common in men (60.5%) than in women.⁹ Although the exact mechanism

underlying this conclusion is unclear, gender-related behavior men are more likely than women to disregard oral health and use tobacco more frequently which is most likely to be to blame.^{12,14}

The prevalence of gingival recession was found to be highest in the age range of 45-54 years, as many as 14 people, and the least at the age of >65 years. Age distribution of the female patients with the highest female sample in the age range of 45-54 years at 31%, and the lowest at 55-64 years at 12%. The age distribution of the male patients with the majority of male samples between the ages of 18-24 and 35-44 (26%), and the lowest, 55-64 (4%) (Figure 3).

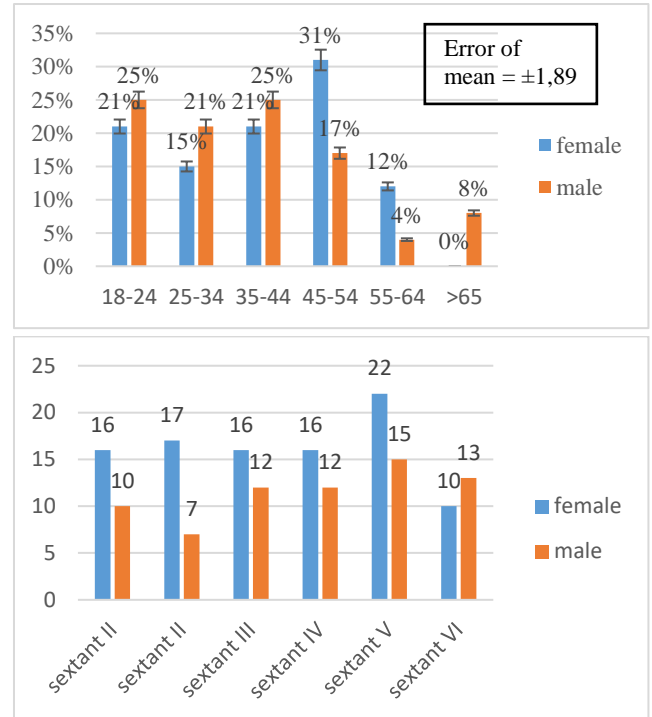


Figure 3. Gingival Recession Sextant Data in Females and male patient

In comparison to other age groups, oral diseases are more common and more likely to occur in the elderly, and oral health tends to decline with age. Recognizing variations and creating age-appropriate oral health improvement plans can be facilitated by knowing the genesis of disorders in particular age groups.^{10,11,12} Gingival recession is more common in older age groups and has a propensity to worsen with age.⁹ Gingival recession ≤ 3 mm, which is linked to aging and is thought to be physiological, and periodontal tissue damage keeps getting worse over time. In younger patients, gingival recession is typically limited and brought on by particular etiological reasons. The cumulative effects of multiple factors, including gingival abrasion and erosion, decreased gingival elasticity, age-related gingival decline, periodontal disease-related retraction, and inadequate dental care with aging, are responsible for gingival recession, according to observations in older subjects. Gingival recession and aging may be related because of the gingiva's extended exposure to recession-causing substances such as frequency of brushing, technique, brushing force, frequency of changing toothbrushes and hardness of the bristles, which results in intrinsic alterations on both a local and systemic level.^{9,13} Vigorous and forceful use of hard or medium stiff-bristled brushes in a horizontal motion can cause minor lacerations, contusions, or abrasions of the gingiva, leading to cleavage detachment, atrophy, or resorption of the underlying alveolar plate, which ultimately results in gingival recession.¹³

Men between the ages of 18 and 24 were more likely to have oral health issues; lifestyle choices, stress, and tooth plaque buildup all affect oral hygiene practices.¹⁵ Men are more likely than women to experience gingival recession at the same age, and it gets worse with aging.¹⁶ Hormonal considerations were the reason why gingival recession was more common in women over 45 years old.¹⁷ Gingival recession and general oral health can be greatly impacted by changes in hormones over the course of a person's life. Puberty, menstruation, pregnancy, and

menopause are the times when the relationship between hormones and gingival recession is most noticeable.^{17,18} Estrogen shortage during menopause increases the risk of gingival recession because it can result in decreased gingival microvascular permeability and collagen formation in connective tissue. Similar to what happens during pregnancy, hormonal contraceptives can also make gingival reactions to local variables worse.¹⁷

Table 1. Correlation of age and sextant of gingival recession

Sextant	Age (Years)						Spearman Correlation	Sig.
	18-24	25-34	35-44	45-54	55-64	>65		
I	5	4	6	8	3	1	.694*	.001**
II	1	5	6	6	5	2		
III	5	4	8	8	3	2		
IV	5	4	7	9	2	2		
V	5	8	11	9	4	2		
VI	2	4	7	6	3	2		

Gingival recession is most common in sextant V for both men and women (Figure 3). However, in women, sextant VI is the least common gingival recession. While men are least common in sextant II. Thus, a combination of anatomical, developmental, and oral hygiene factors promote gingival recession in mandibular anterior teeth, particularly central incisors.^{19,20} Some people ascribe gingival recession in maxillary posterior teeth to poor dental hygiene, as shown by the presence of calculus and plaque, but others blame it to traumatizing tooth brushing and root angulation.^{9,20} The eruption location, which is often more anterior and causes thinner alveolar bone and less connective tissue, may have an impact on gingival recession in sextant V. The mandibular incisors and canines' morphology, which makes them challenging to clean, their biotype and proclination, which can alter gingival thickness, and inclination changes brought on by orthodontic treatment could all be contributing factors to sextant V susceptibility to gingival recession.¹⁸ Sextant II with the highest Mean Root Coverage (MRC) and Complete Root Coverage (CRC) was linked to a study examining the effect of tooth position on gingival recession.²¹ Spearman correlation test between age and sextant occurrence of gingival recession showed there was a significant relationship with a value of 0.001 ($p < 0.05$). The Spearman correlation value of 0.694 indicates the strength of the relationship is strong and the direction of the relationship is positive which means gingival recession will increase with increasing age (Table 1). The maxillary anterior sextant showed thinner gingiva, which may be linked to older age groups.^{20,22} One research in the Bulgarian population also showed that the occurrence and frequency of gingival recession increase with increasing of age.²³ The development of mucogingival problems is significantly influenced by gingival thickness. Thick biotype, which is defined by thick gingival tissue, is typically linked to good periodontal health. Ample evidence shows that a thick biotype is better able to withstand trauma and gingival recession, promotes attachment, and clinically demonstrates greater resistance to inflammation, making it less susceptible to gingival recession.²⁴

Conclusion

In this study, gingival recession was most commonly found in women in the age group 45-54 years, so it can be concluded that age and gender play a role in the occurrence of gingival recession. as is known that the etiology of gingival recession is multifactorial, and its appearance is always the result of more than one factor acting together. Gingival recession was most prevalent in sextant V (in teeth #34 #35 #36 #37 #38) or left posterior teeth of the mandible than in the other teeth. Future studies will involve in-depth research on the etiological factors, focus on evaluating the effectiveness of various treatment methods, longitudinal studies to monitor the progression of gingival recession over time.

Conflict of Interest

The authors declare no conflict of interest.

Authors' Declaration

The authors hereby declare that the work presented in this article is original and that any liability for claims relating to the content of this article will be borne by them.

Acknowledgment

The authors are grateful to the Periodontology Specialist Polyclinic Of Oral And Dental Hospital Airlangga University, for granting research permission.

References

- Amaliya A, Pribadi S, Akbar YM, Sitam S. Periodontal Disease: a Rise in Prevalence in Military Troops Penyakit Periodontal. *Odonto*. 2021;8(1):6-17. doi: [10.30659/odj.8.1.6-17](https://doi.org/10.30659/odj.8.1.6-17).
- Newman MG, Takei HH, Klokkevold PR, Carranza FA. *Newman and Carranza's Clinical Periodontology*. 13th Ed. Elsevier; 2019:32-34.
- Bui FQ, Almeida-da-Silva CLC, Huynh B, Trinh A, Liu J, Woodward J, Asadi H, Ojcius DM. Association between periodontal pathogens and systemic disease. *Biomed J*. 2019; 42(1): 27-35. Doi: [10.1016/j.bj.2018.12.001](https://doi.org/10.1016/j.bj.2018.12.001).
- Tandigau CM, Juliatri J, Khoman JA. Relationship between Tooth Brushing Technique and Gingival Recession. *e-Gigi*. 2023; 11(2):121-127. doi:[10.35790/eg.v11i2.45014](https://doi.org/10.35790/eg.v11i2.45014).
- Imber JC, Kasaj A. Treatment of Gingival Recession: When and How?. *Int Dent J*. 2021; 71(3):178-187. doi: [10.1111/idj.12617](https://doi.org/10.1111/idj.12617).
- Putri AKNPKN, Zubardiah L. Description of Gingival Recession in Drug using Patients. *JKGT*. 2020; 1(2):1-5. doi:[10.25105/jkgt.v1i2.6393](https://doi.org/10.25105/jkgt.v1i2.6393).
- Yılmaz M, Oduncuoglu BF, Yılmaz MNN. Evaluation of patients' perception of gingival recession, its impact on oral health-related quality of life, and acceptance of treatment plan. *Acta Odontol Scand*. 2020; 78(6):454-462. doi: [10.1080/00016357.2020.1758773](https://doi.org/10.1080/00016357.2020.1758773).
- Seong J, Bartlett D, Newcombe RG, Claydon NCA, Hellin N, West NX. Prevalence of gingival recession and study of associated related factors in young UK adults. *J Dent*. 2018; 76:58-67. Doi: [10.1016/j.jdent.2018.06.005](https://doi.org/10.1016/j.jdent.2018.06.005).
- Mythri S, Arunkumar SM, Hegde S, Rajesh SK, Munaz M, Ashwin D. Etiology and occurrence of gingival recession- An epidemiological study. *J Indian Soc Periodontol*. 2017; 19(6):671-675. Doi: [10.4103/0972-124X.156881](https://doi.org/10.4103/0972-124X.156881).
- Janto M, Iurcov R, Daina CM, Neculoiu DC, Venter AC, Badau D, Cotovanu A, Negrau M, Suteu CL, Sabau M, Daina LG. Oral Health among Elderly, Impact on Life Quality, Access of Elderly Patients to Oral Health Services and Methods to Improve Oral Health: A Narrative Review. *J Pers Med*. 2022; 12(3):372-379. Doi: [10.3390/jpm12030372](https://doi.org/10.3390/jpm12030372).
- Kozłowska M, Wawrzyn-Sobczak K, Karczewski JK, Stokowska W. The Oral Cavity Hygiene As The Basic Element Of The Gingival Recession Prophylaxis. *Rocz Akad Med Białymst*. 2018; 50 suppl 1:234-237.
- Lipsky MS, Su S, Crespo CJ, Hung M. Men and Oral Health: A Review of Sex and Gender Differences. *Am J Mens Health*. 2021; 15(3):1-6. Doi: [10.1177/15579883211016361](https://doi.org/10.1177/15579883211016361).
- Mythri S, Arunkumar SM, Hegde S, Rajesh SK, Munaz M, Ashwin D. Etiology and occurrence of gingival recession - An epidemiological study. *J Indian Soc Periodontol*. 2016; 19(6):671-675. Doi:[10.4103/0972-124X.156881](https://doi.org/10.4103/0972-124X.156881).
- Osahon PT, Ekanem EN. Assessment of Stroke Awareness Among Public Servants in a Study Population in Nigeria. *Trop J Nat Prod Res*. 2018;2(6):278-281. doi:[10.26538/tjnpr/v2i6.4](https://doi.org/10.26538/tjnpr/v2i6.4).
- Bhardwaj VK, Sharma D, Jhingta P, Fotedar S, Sahore M, Manchanda K. Assessment of relationship between body mass index and periodontal status among state government employees in Shimla, Himachal Pradesh. *J Int Soc Prev Community Dent*. 2018; 3(2):77-80. Doi: [10.4103/2231-0762.122439](https://doi.org/10.4103/2231-0762.122439).
- Kassab MM, Cohen RE. The etiology and prevalence of gingival recession. *J Am Dent Assoc*. 2017; 134(2):220-225. Doi: [10.14219/jada.archive.2003.0137](https://doi.org/10.14219/jada.archive.2003.0137).

17. Boyapati R, Cherukuri SA, Bodduru R, Kiranmaye A. Influence Of Female Sex Hormones In Different Stages Of Women On Periodontium. *J Midlife Health*. 2021; 12(4):263-266. Doi: [10.4103/jmh.jmh_142_21](https://doi.org/10.4103/jmh.jmh_142_21).
18. Kola-Mustapha AT, Jaiyeola ET, Olufadi-Ahmed HY, Ayotunde HT, Ghazali YO. Evaluation of Zingiber officinale Rosc. And *Ocimum basilicum* L. Essential Oils-Loaded Gel Base for the Treatment of Oral Candidiasis. *Trop J Nat Prod Res*. 2020; 4(10):831-837. Doi: [10.26538/tjnpr/v4i10.28](https://doi.org/10.26538/tjnpr/v4i10.28).
19. Colet R, Cotrin P, Oliveira RC, Valarelli FP, de-Oliveira RCG, Salmeron S, Freitas KMS. Gingival recession in mandibular anterior teeth in patients with Class II malocclusion treated with elastics and Twin Force appliance. *Am J Orthod Dentofacial Orthop*. 2022; 162(4):529–537. Doi: [10.1016/j.ajodo.2021.05.015](https://doi.org/10.1016/j.ajodo.2021.05.015).
20. Sarma M, Shenoy N. Association between Gingival Thickness and Recession in Nonperiodontitis Patients. *J. Orofac. Sci*. 2021; 13(2):142–147. Doi: [10.4103/jofs.jofs_62_21](https://doi.org/10.4103/jofs.jofs_62_21).
21. Kalina E, Zadurska M, Gorski B. Postorthodontic lower incisor and canine inclination and labial gingival recession in adult patients. *J Orofac Orthop*. 2021; 82(4):246–256. Doi: [10.1007/s00056-020-00263-1](https://doi.org/10.1007/s00056-020-00263-1).
22. Ita BN, Eduok SI. Antioxidant and Antibacterial Activity of Alkaloid Fractions of *Tristemma hirtum* P. Beauv. *Trop J Nat Prod Res*. 2020;4(4):179-184. doi: [10.26538/tjnpr/v4i4.10](https://doi.org/10.26538/tjnpr/v4i4.10).
23. Georgieva I. Etiology of gingival recessions -A literature review. *Scr. Sci. Med. Dent*. 2019. 5(2):7-13. Doi: [10.14748/ssmd.v5i2.5970](https://doi.org/10.14748/ssmd.v5i2.5970).
24. Zucchelli G, Tavelli L, Barootchi S, Stefanini M, Rasperini G, Valles C, Nart J, Wang H. The Influence Of Tooth Location On The Outcomes Of Multiple Adjacent Gingival Recessions Treated With Coronally Advanced Flap: A Multicenter Re-Analysis Study. *J Periodontol*. 2019; 90(11):1244– 1251. Doi: [10.1002/JPER.18-0732](https://doi.org/10.1002/JPER.18-0732).