

Discussion of facial gingiva. different type of gingival



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Discussion Studies have shown a considerable intra and inter-individual variation in both width and thickness of facial gingiva. Different type of gingival biotype exhibits different pathologic response when subjected to inflammatory, traumatic or surgical insults. It has been suggested that plaque-associated inflammation may result in a deep pocket with a thick-flat gingival biotype and recession with thin-scalloped biotype. 2 Patient with thin biotype are more likely to have gingival recession following surgical therapies.

29, 30 The present study was carried out to determine the gingival biotypes in patients attending a hospital of eastern Nepal. Of various methods of determining gingival biotype, TRAN technique was utilized in the present study owing to its advantages over others. Simple visual evaluation method cannot be used in clinical practice because even experienced clinicians fail to distinguish between thick and thin biotype. 31 Another commonly used technique, transgingival probing with a probe or endodontic file with silicon stopper, has also disadvantages such as the measurement can be affected by probe angulations and tissue distortion during probing.

15 Further, it is unethical to do transgingival probing in healthy gingiva just to determine thickness. Although CBCT scans are more objective than direct measurement, Fu et al 6 in a study, had shown no statistical difference between clinical measurement with caliper and CBCT measurement of both soft tissue and alveolar bone thickness. Other disadvantages may be its expensiveness to install, a necessity of technical skills and unavailability in each and every hospital. Ultrasonic devices appear to least invasive, reliable and valid tools to measure gingival thickness but they are not popular and <https://assignbuster.com/discussion-of-facial-gingiva-different-type-of-gingival/>

not available everywhere. The TRAN method was found to be highly reproducible with 85% of intraexaminer repeatability for gingival thickness assessment in a clinical trial of 100 periodontally healthy subjects. 4 Therefore, TRAN technique was chosen in the present study. The highest number of the patient was in 20 - 25 year category followed by 40 - 45, 30-34 and 35 - 39 year category, respectively.

The observation of present study revealed that with the increase in the age, there is more prevalence of thicker gingival biotype. This result was in disagreement with the studies done by Vandana et al³² and Kolte et al²⁶ who showed the thinner thickness of facial gingiva in older individuals compared to younger. The reasons behind this difference might be that 1) in the current study, we used TRAN technique to determine gingival biotype which does give accurate measurement of thickness of gingiva and 2) the gingival epithelium might not be atrophic or decreased keratinized at 40 - 45 year because atrophic epithelium is usually observed after the age of 65 years. 33 The percentage of thick biotype in the sample was 70.8 % and most commonly present in male gender which was in accordance with studies^{4, 27} that showed the prevalence of thick biotype in two- third of sample population.

The prevalence of thick gingival biotype differs in races, ethnicity, and geographic location. The prevalence of thicker gingival biotype in male was 63% in Mangalore, 34 74% in Trivandrum, 35 94.6% in Bareilly, 27 58.69 % in Rohtak³⁶ and 75.

8 % in Karad, 37 respectively. The result of the present study was in accordance with previous studies done by Shah et al²⁸ and Cook et al³⁸ where they didn't observe any significant difference in biotypes between male and female patients. In the present study, gingival biotypes were not found to be different in either smoker or non-smoker. This finding was inconsistent with previous studies^{39, 40} which showed a higher number of smokers with thicker gingival biotype. It was hypothesized that nicotine increases the rate of proliferation of gingival epithelium⁴¹ and increase the production of collagen⁴² thus increasing epithelial thickness among smokers. The reason behind insignificance might be because of very low number of smokers in our study. In a study of the effect of toothbrush stimulation on the keratinization of the gingival epithelium, Kuntsche et al⁴³ showed a significant thickening in all epithelial layers in an animal study. However, increase in keratinization of epithelium is a result of the removal of plaque rather direct effect of stimulation by toothbrush.

44 The result of our study also revealed that there was no significant difference between one who brushes once or twice daily. Further, this insignificance might be because we had not considered the techniques of tooth brushing. Ochsenein and Ross¹⁴ suggested that a long-tapered teeth tend to have thin-scalloped periodontium, whereas wide-square teeth have thick-flat periodontium. On the other hand, various studies^{45, 46, 38} reported no relationship between the tooth shape and gingival thickness according to the CW and CL. Gingival thickness affects the biotype of the gingiva, whereas, crown width (CL): Crown length (CW), crown shape and

papilla height are responsible for determining the gingival bioform/scallop. Therefore, the crown shape was not considered in the present study.

A higher proportion of thicker biotype in Adibasi janajati ethnic community (indigenous nationalities) compared to other ethnic groups has suggested a need for investigations in genetic factors that can affect gingival biotype. Wara-aswapati et al⁴⁷ also suggested that racial and genetic factors may act as other confounding factors that influence gingival thickness which needs to be investigated further. In the present study, we use Lugol's solution for determination of mucogingival junction because the intra and interexaminer reproducibility were shown to be better with a visual with histochemical staining method (intra-class correlation coefficient 0.99) compared to the visual method and the functional method for MGJ determination in order to measure the apico-coronal dimension of the gingiva. ⁴⁸ Data from current study demonstrate an association between gingival biotype and width of keratinized and attached gingiva. These findings are consistent with the study done by Olsson et al⁴⁵ who demonstrated a significant relationship between the thickness of gingival margin and width of keratinized gingiva, and buccolingual width of central incisor after performing regression analysis.

Further, they also found 1.2 to 1.35 mm wider keratinized gingiva with wide crown form compared to narrow crown form central incisor. In a multivariate models analysis, Stein et al ⁴⁹ identified CW/CL and GW as significant predictors for gingival thickness at CEJ, whereas CW/CL was a significant predictor for buccal cortical bone thickness at the crest. The result of the present study was concurrent with the studies done by Ainamo et al⁵⁰ and <https://assignbuster.com/discussion-of-facial-gingiva-different-type-of-gingival/>

Vincent et al 51 who found an increase in width of keratinized gingiva with advancing age. The MGJ remains at a probably genetically predetermined location while teeth move in an occlusal direction through adult life. With wear of the incisal edge and continued tooth eruption, the gingival margin and the entire dentogingival complex move coronally which results in the increase in the width of the attached gingiva.

In the absence of concurrent retraction of the gingival margin, this results in an increase of the width of AG with advancing age. 50