

Awareness on periodontal aesthetic procedures among dental students in a private dental college in Chennai- A questionnaire based survey

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Abstract

Introduction: Periodontics is that speciality of dentistry which deals with the soft and hard tissues supporting the tooth structure and is one of the fastest growing dental specialties. Less attention has been given to soft tissue esthetics, the shape of the face and position of the lips, and the contours, color, and overall appearance of the gingiva and associated soft tissues.

Aim: The aim of this questionnaire based survey was to assess the degree of awareness on periodontal aesthetic procedures among dental students in a private dental college in Chennai.

Materials and Methods: This was a cross-sectional descriptive survey which was conducted from october 2020 to march 2021. Questionnaires consisting of 13 questions related to different periodontal aesthetic procedures along with demographic details were used, the responses were then tabulated followed by statistical analysis was done using SPSS software. Descriptive statistics in the form of percentages and ratios were performed for all the questions and the chi-square test was used to detect significant associations among undergraduates and postgraduates.

Results: There were no statistical significant differences between the awareness on periodontal aesthetic procedures between the undergraduates and postgraduate students, (Chi square analysis ; p value >0.05) in all the questions between undergraduate and postgraduate students.

Conclusion: Within the limitations of the study it can be concluded that there was no significant difference in awareness between undergraduates and postgraduates implying both undergraduate and postgraduate dental students were mostly aware of the periodontal aesthetic procedures.

Keywords: Aesthetics, black triangle, depigmentation, innovative technology, mucogingival surgery

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INTRODUCTION

Periodontics is that speciality of dentistry which deals with the soft and hard tissues supporting the tooth structure and is one of the fastest growing dental specialties(1). The main scope of periodontics once was the elimination of periodontal pockets only. The use of apically positioned flaps, osseous surgery and gingivectomy achieved goals of pocket elimination and the stabilization of periodontal disease progression. A common side effect of the resective approach to periodontics was the creation of recession and that resulted in a compromised esthetic outcome.

Periodontics have a broad area of specialization, in recent times it has become one of the pioneers in aesthetic dentistry. Any defect of the periodontium which includes gingival recession is very common in adult patients, as this recession is influenced by age and standards of oral hygiene. Gingival recession has a multiple of etiology and increases with age(2)(3). Gingival recession is a pathological condition where the gingival margin migrates apically beyond cemento-enamel junction(CEJ) leading to exposure of the root surface of the tooth(4)Mucogingival surgery was also used for the treatment of gingival recessions to arrest the progression of the lesion and to cover denuded root surfaces (3,5–7). Clinical and experimental studies

have shown that any amount of marginal gingiva is adequate to maintain periodontal health in the absence of bacterial plaque accumulation(8,9). The results of these studies have greatly reduced the need for mucogingival surgery. Nevertheless, cosmetic rehabilitation is still an area in which free gingival grafts and pedicle flaps are frequently employed. Recently, a series of different procedures referred to as “surgical procedures performed to correct or eliminate anatomic, developmental or traumatic deformities of the gingiva or alveolar mucosa” have been included in the field of mucogingival procedures(10). Miller included procedures such as the correction of ridge deformities, exposure of unerupted teeth for orthodontic treatment and crown lengthening. Allen(11) considered the treatment of gingival pigmentation and discoloration and the correction of flat marginal contours, “gummy” smile and gingival asymmetry also pertinent to mucogingival surgery. On the basis of the above-mentioned studies, the American Academy of Periodontology (12) has replaced the term “mucogingival surgery” with the more general term “soft tissue plastic surgery” to describe surgical procedures designed to correct defects in the morphology, position or amount of gingiva surrounding the teeth. There are multiple factors that affect aesthetics, few of which are the colour and shape of the teeth, in addition, gums play an important role in maintaining a pleasant appearance of the overall face.

Esthetic considerations are playing a greater role in the treatment planning of dental care, especially in the restoration of anterior teeth. Much attention has been paid to both operative and prosthodontic techniques that are available in esthetic restorative dentistry. Less attention has been given to soft tissue esthetics, the shape of the face and position of the lips, and the contours, color, and overall appearance of the gingiva and associated soft tissues. Our team has extensive knowledge and research experience that has translated into high quality publications.(13–25),(26–30)(31)(32).The present survey aims at assessing the knowledge of periodontal aesthetic procedures among undergraduate and postgraduate students. This would help in assessing the need for theoretical as well as clinical emphasis of the periodontal aesthetic procedures procedures.

Materials And Methods

The research was based on a cross-sectional study in the form of questionnaires distributed by an online survey link to all undergraduates and postgraduates. Questionnaire consisted of 13 questions. Ethical approval was obtained from the scientific research committee at College. Detailed information about the study, as well as its purpose and techniques, was also included. A total of 100 students including undergraduate and postgraduate students participated in this survey. The responses were tabulated in excel and were then imported to SPSS software by IBM. then, descriptive statistics were computed. The chi-square test was used to compare the data and check for the distribution at 0.05 level of significance for effect of statistical significance. Results were analysed graphically, for both frequency distribution and statistical significance.

Results And Discussion

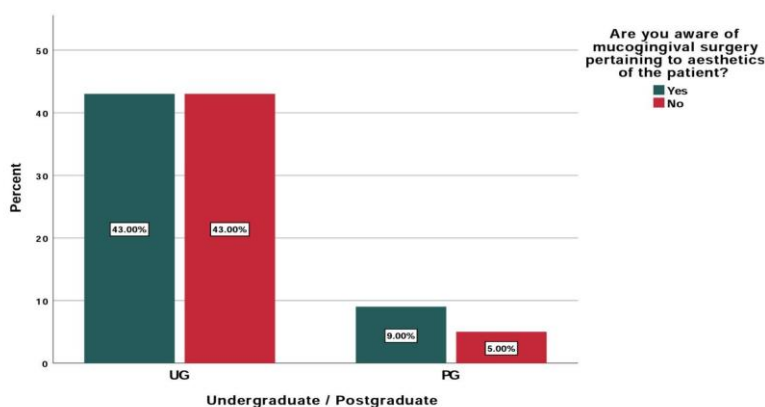


Figure 1: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked if they are aware of mucogingival surgery pertaining to the esthetics of the patient. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes yes and red colour denotes no. Chi-square test was done and association was found to be statistically not significant(p value= 0.321), proving there is no statistical association.

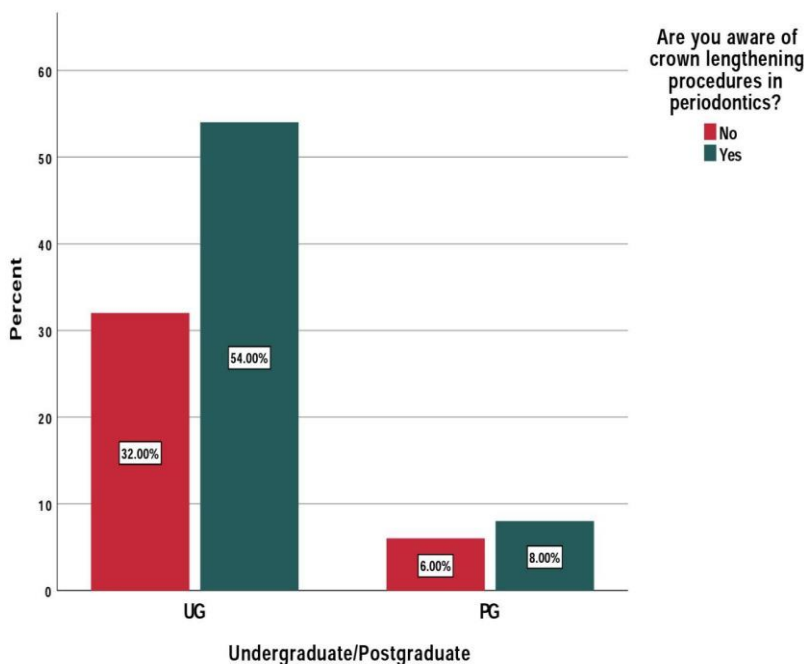


Figure 2: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked if they are aware of crown lengthening procedures in periodontics. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes yes and red colour denotes no. Chi-square test was done and association was found to be statistically not significant(p value= 0.686),proving there is no statistical association.

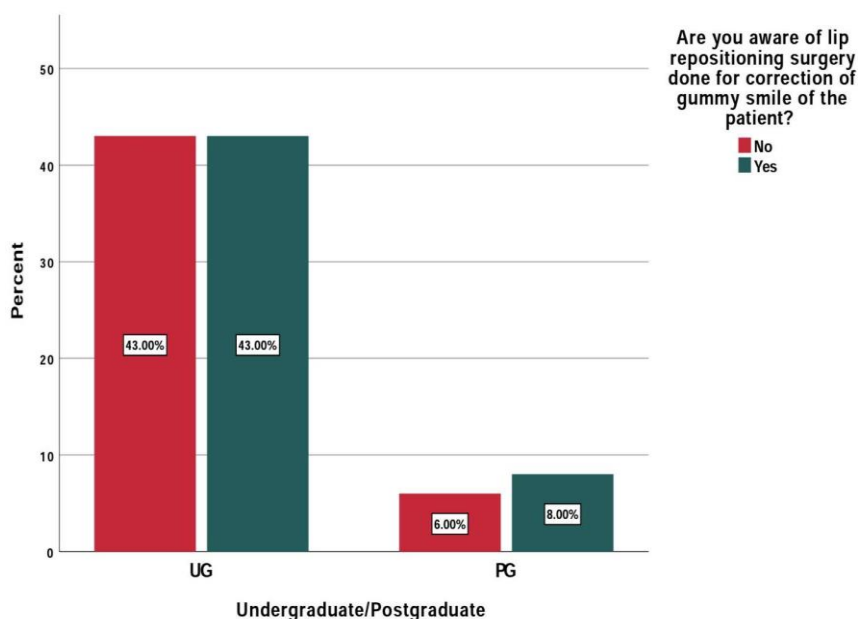


Figure 3: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked if they are aware of lip repositioning surgery done for correction of gummy smile of the patient. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes yes and red colour denotes no. Chi-square test was done and association was found to be statistically not significant(p value= 0.620),proving there is no statistical association.

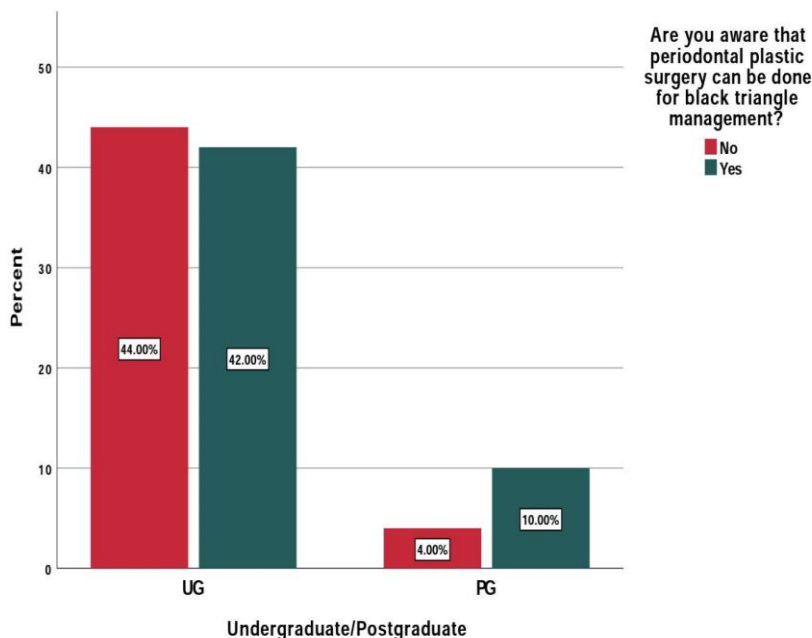


Figure 4: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked if they are aware that periodontal plastic surgery can be done for black triangle management . X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes yes and red colour denotes no. Chi-square test was done and association was found to be statistically not significant(p value= 0.099),proving there is no statistical association.

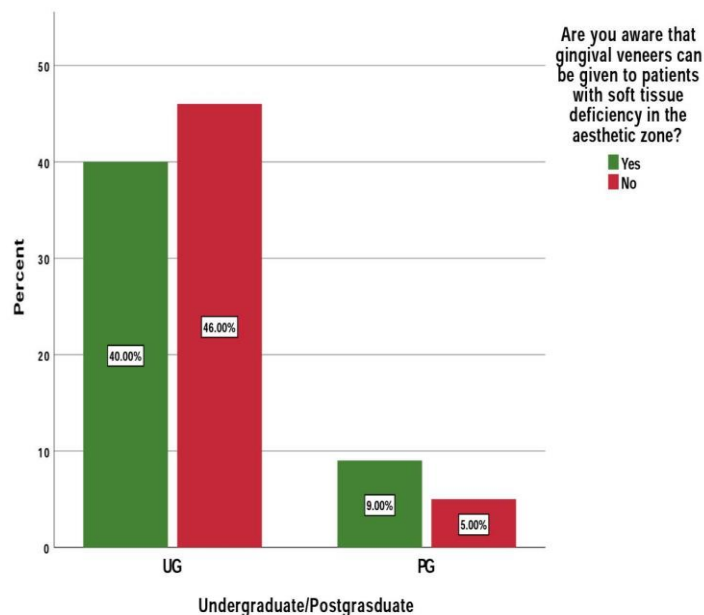


Figure 5: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked if they are aware that gingival veneers can be given to patients with soft tissue deficiency in the aesthetic zone. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes yes and red colour denotes no. Chi-square test was done and association was found to be statistically not significant(p value= 0.217),proving there is no statistical association.

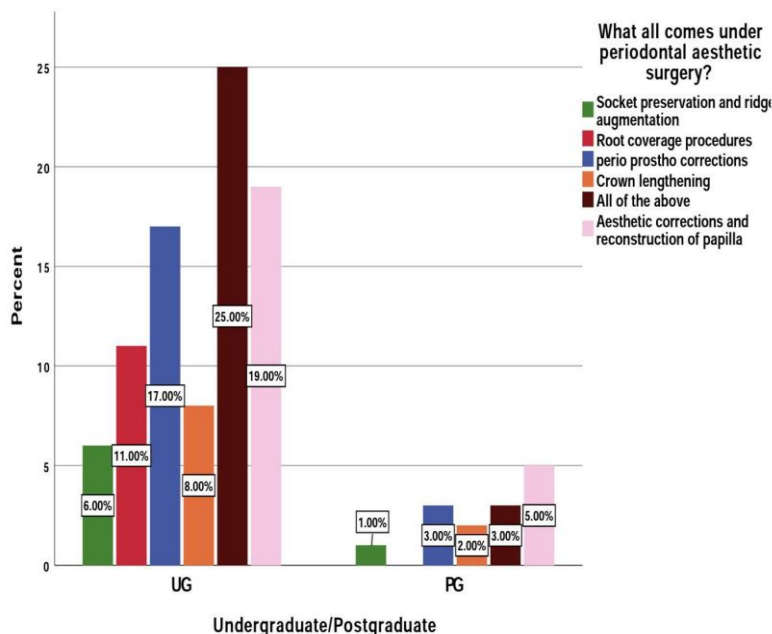


Figure 6: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked what all comes under periodontal aesthetic surgery. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes socket preservation and ridge augmentation, red colour denotes root coverage procedures, blue colour denotes perio prostho corrections, orange colour denotes crown lengthening, pink colour denotes aesthetic corrections and reconstruction of papilla and brown colour denotes all the above. Chi-square test was done and association was found to be statistically not significant(p value= 0.656),proving there is no statistical association.

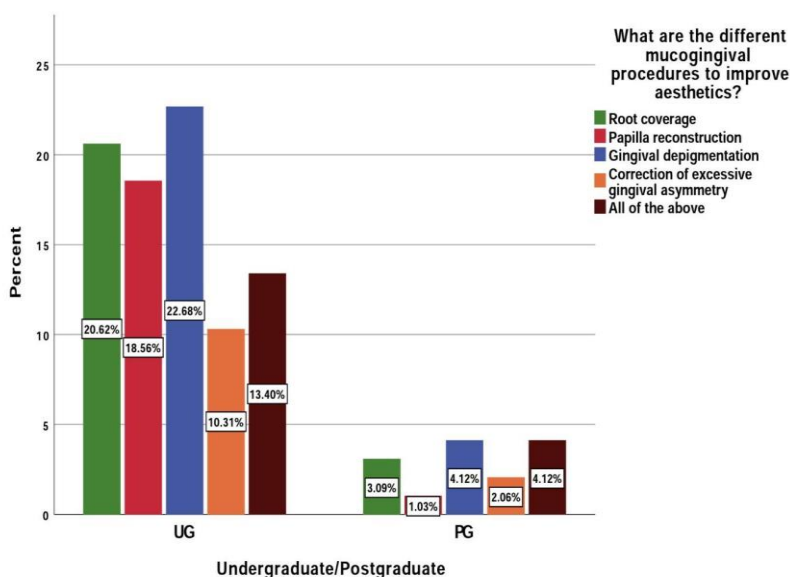


Figure 7: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked what are the mucogingival procedures to improve esthetics. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes root coverage, red colour denotes papilla reconstruction, blue colour denotes gingival depigmentation, orange colour denotes correction of excessive gingival asymmetry and brown colour denotes all the above. Chi-square test was done and association was found to be statistically not significant(p value= 0.684),proving there is no statistical association.

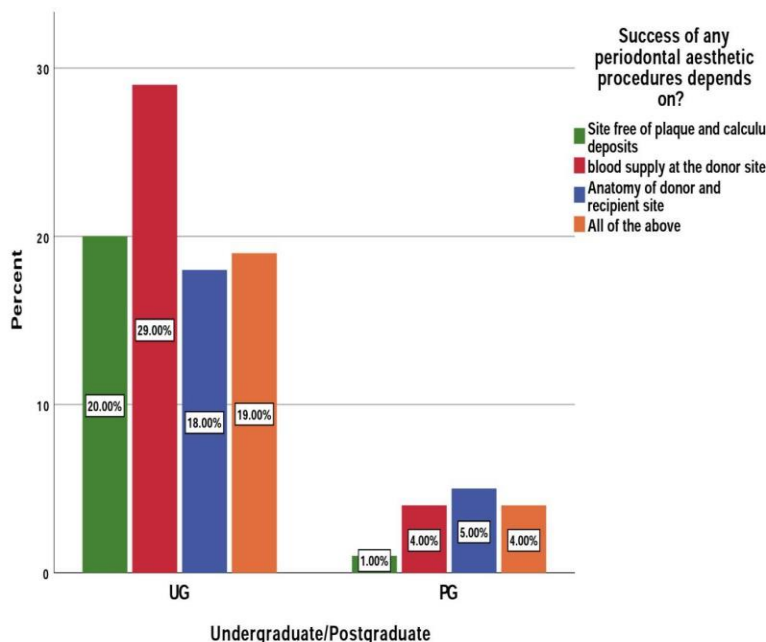


Figure 8: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked about on what all success of any periodontal aesthetic procedures depends. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes site free of plaque and calculus deposits, red colour denotes blood supply at the donor site, blue colour denotes anatomy of donor and recipient site and orange colour denotes all the above. Chi-square test was done and association was found to be statistically not significant(p value= 0.400),proving there is no statistical association.

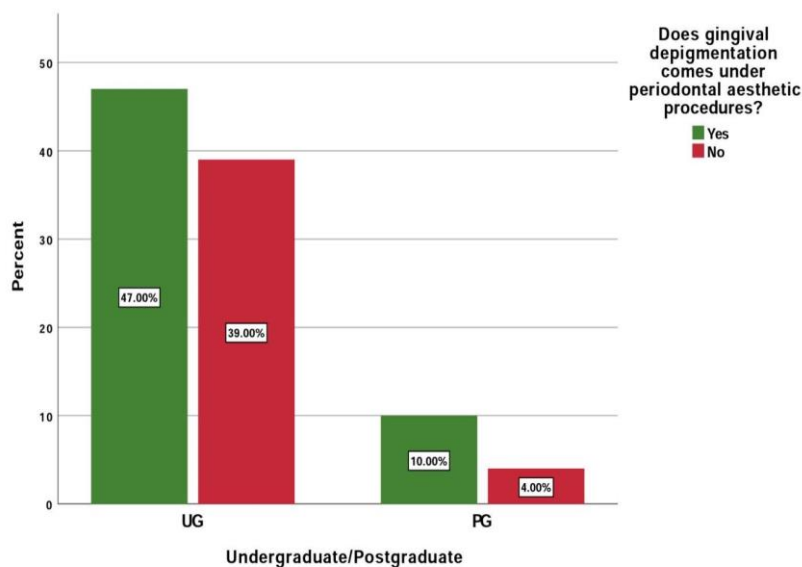


Figure 9: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked about do gingival depigmentation comes under periodontal aesthetic procedures. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes yes and red colour denotes no. Chi-square test was done and association was found to be statistically not significant(p value= 0.240),proving there is no statistical association.

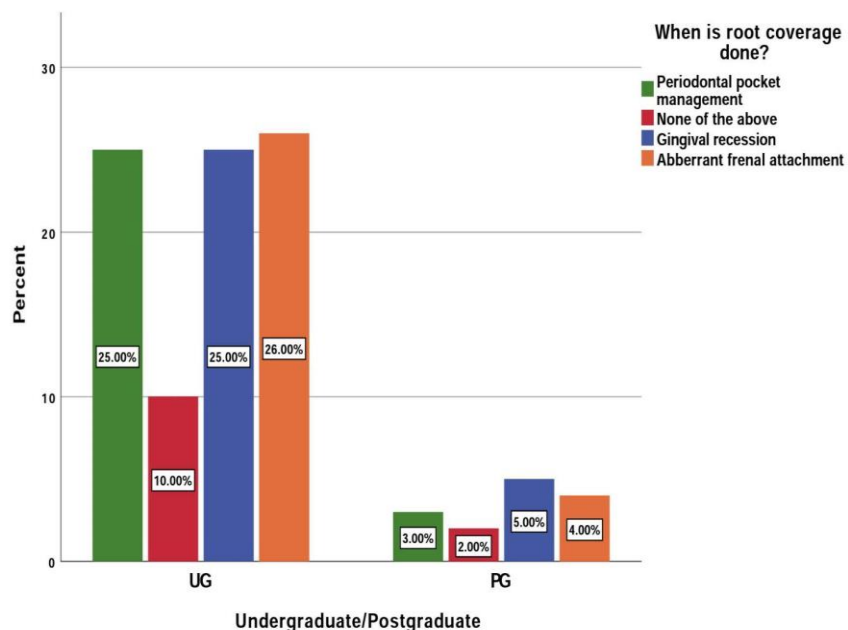


Figure 10: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked about when root coverage is done. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes periodontal pocket management, blue colour denotes gingival recession, orange colour denotes aberrant frenum attachment and red colour denotes none of the above. Chi-square test was done and association was found to be statistically not significant(p value= 0.917),proving there is no statistical association.

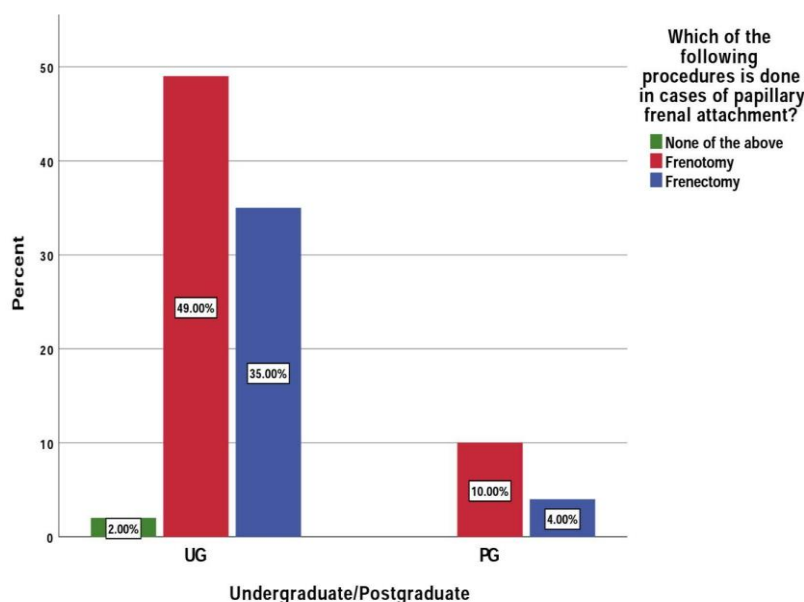


Figure 11: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked which of the following procedures is done in cases of papillary frenal attachment. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where blue colour denotes frenectomy, red colour denotes frenotomy and green colour denotes none of the above. Chi-square test was done and association was found to be statistically not significant(p value= 0.547),proving there is no statistical association.

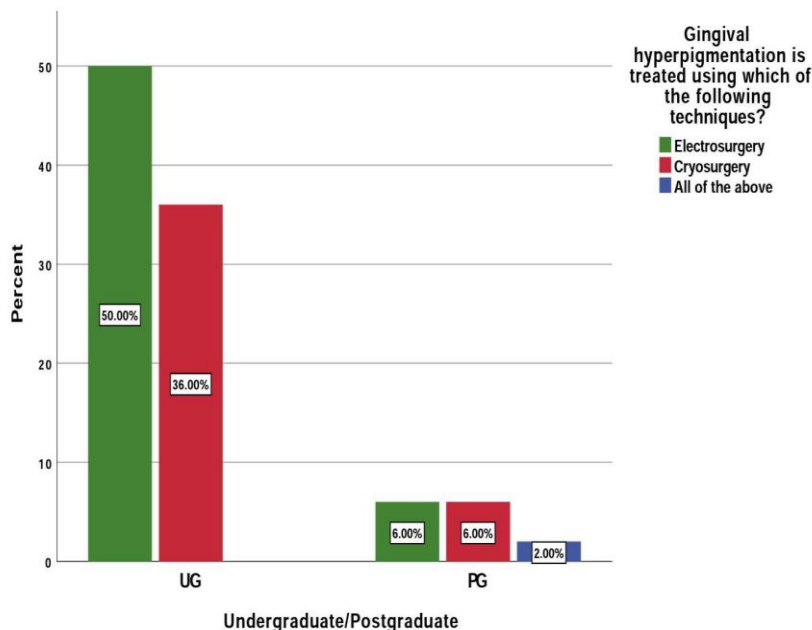


Figure 12: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked if gingival hyperpigmentation is treated with which technique. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes electrosurgery, red colour denotes cryosurgery and blue colour denotes all of the above. Chi-square test was done and association was found to be statistically significant (p value= 0.002), proving there is statistical association.

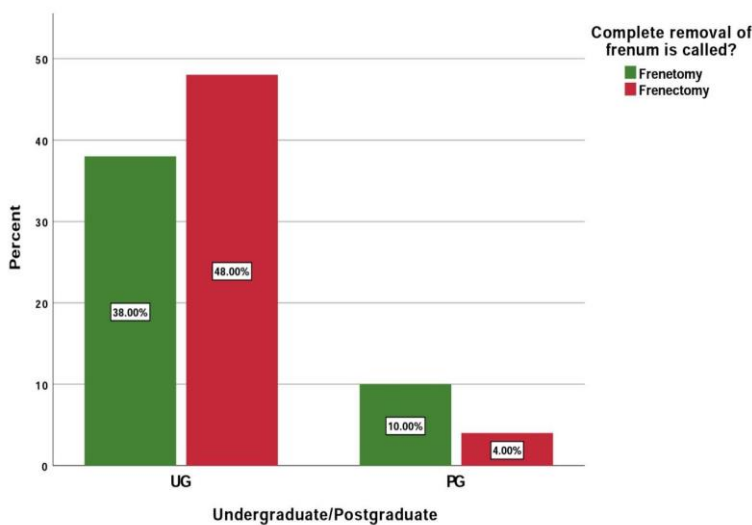


Figure 13: Bar graph represents the responses given by undergraduates and postgraduates dental students when asked what is complete removal of frenum called. X-axis represents the qualification of the dental students and Y-axis represents their number of responses where green colour denotes frenotomy and red colour denotes frenectomy. Chi-square test was done and association was found to be statistically not significant (p value= 0.317), proving there is no statistical association.

The term mucogingival surgery are procedures that correct the relation between gingiva and the mucous membrane. It focuses on correction of defects of the attached gingiva, vestibule, and frenal attachments(33). In 1999, mucogingival surgery was called “periodontal plastic surgery” at the world workshop. In general, periodontal plastic or mucogingival procedures can be broadly categorized as (a) root coverage procedures, (b) procedures to deepen the vestibule, (c) procedures to remove frenum,

and (d) procedures to improve esthetics(3,34). A frenum is a fold of mucous membrane with enclosed muscle fibers that attach the lip and cheek to the gingival and the underlying bone. A frenum becomes a problem when it approaches the marginal gingiva. This affects the esthetics and can also result in localized recession due to the action of the frenum. Hence, corrective procedures should be planned and performed. Frenectomy is referred to as the surgical removal of the frenum including its attachments to the underlying bone. Frenotomy is a procedure that involves the relocation of the frenum to a more apical position. These procedures are performed with other corrective procedures(33).The maxillary anterior region possesses a greater concern in terms of esthetics in all patients. Pigmentation, high lip line, gummy smile, etc., are the common complaints with regard to the esthetic zone.

Periodontal plastic surgery deals with improving esthetics, especially in the maxillary anterior region. Crown lengthening deals with the removal of excessive gingival tissue from the labial surfaces of the crown, thus increasing the amount of exposure of clinical crown. At present, the most convenient and preferred technique is done using soft tissue lasers. Lasers can also be used to correct pigmented gingival tissue. A number of factors influence gingival pigmentation such as activity of melanocytes and habits such as smoking. These pigments can be removed from the surface epithelium by lasers, cryosurgery, electrosurgery, etc. In this study, most of the undergraduate were aware of these procedures but had little knowledge toward the clinical implication of these. As newer techniques have constantly been developing, it is essential that we have a thorough knowledge of these procedures and also incorporate them for better treatment outcomes.

In other studies(35)(36), it was seen that a significant variation in terms of awareness regarding periodontal aesthetic procedures was noted. In other studies(37), it was observed that 96% of students were aware of mucogingival or periodontal plastic surgical procedures. When a question was raised with regard to the incorporation of these procedures as a treatment modality, 78% of the participants were aware of its indication. In another study(4), 60% of the participants had knowledge with regard to the indications and techniques of the periodontal aesthetic procedures. Many studies(38,39) showed that the level of awareness on the different mucogingival surgeries and periodontal plastic surgeries was more in postgraduate students.

Conclusion

Within the limitations of the study it can be concluded that there was no significant difference in awareness between undergraduates and postgraduates implying both undergraduate and postgraduate dental students were mostly aware of the periodontal aesthetic procedures.

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Conflict Of Interest

None to declare.

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