

A STUDY ON THE INFLUENCE OF GINGIVAL ESTHETICS ON THE ESTHETIC PERCEPTION OF WIDE SMILE

* S. Sheeba Shree, *A. Evans Shirley, **A. Shyammohan, ***M. Aarti Rajambigai, * M. Jeffy

* Post Graduate Student, *** Professor & HOD Department of Prosthodontics, Crown & Bridge, Rajas Dental College And Hospital, Tirunelveli, Tamilnadu ** Professor, Department of Prosthodontics, Crown & Bridge, PMS College of Dental Sciences Trivandrum Kerala. Corresponding author: Dr. Sheeba Shree, E-mail: sheebasrinivas11@gmail.com

<https://doi.org/10.55231/jpid.2024.v07.i02.03>

Abstract

Aim: To examine the influence of gingival esthetics on the esthetic perception of wide smile; as when the subject smiles more openly exposing the gingiva and how it is esthetically appreciated by the common people and to correlate the gold standard criteria (Gingival zenith alignment is considered gold standard here) with the manipulated gingival esthetics. Materials & Methods: 50 clinical and 50 nonclinical students, a total of 100 students were involved in the study to score the esthetics of the smile photographs shown to them. Results: clinical and non clinical students were not able to find all the manipulated smiles as unesthetic smile. Conclusion: Gold standard factors like Gingival zenith doesn't always play an important role in determining esthetic smile.

Keywords: esthetics, gingiva, smile

Introduction :

To express happiness in life, smile is an essential factor. To make that smile look elegant, so many esthetical factors are taken into consideration. Gingival esthetics is one among the important

factors that can influence smile. There are less evidence based on this correlation between gingival esthetics and wide smile. Some smiles are very pleasing even when they do not follow the gold standard criteria. It should be assessed that whether people can appreciate that as a pleasing smile even if the gold standard is not met.

Materials and Methods:

Common people have no idea and knowledge on esthetic factors. Non clinical students whose knowledge in the esthetic factors are comparatively less than the Clinical students were selected to get non biased results. A total of 100 students of which 50 from 1st, 2nd year (non clinical) B.D.S and 50 from 3rd, 4th year (clinical) B.D.S are involved in the study. Each student is asked to be seated at a standard distance from the monitor and for each student 8 photographs were projected randomly and, out of which 2 photos have ideal smile and 3 manipulated photos for each ideal smile.^{1,2} A scoring system was made for rating the smiles (Table 1) & students were asked to rate the smile according to their perspective of esthetics. Scoring for each smile

PROSTHETIC AND IMPLANT DENTISTRY

Official Publication of Indian Prosthodontic Society
Kerala State Branch

was recorded in the excel sheet and statistics were interpreted. To avoid confusion, the smile photographs were named and tabulated (Table 2,3) for analysis. Fig 1,2,3,4,5,6,7,&8 shows the ideal and edited smile photographs used in this study. The data analysis was done using the SPSS Version 22Software, IBM Statistics, USA using Mann- Whitney Test.

Results:

For P1, P6, P8 non clinical students gave the score more towards the excellent smile, clinical students gives more towards the poor smile. For P2, P4, P7, non clinical students gave the score more towards the poor smile, clinical students gives more towards the excellent smile. Table 4 gives the statistical data for the study. While

Table 1- Scoring System For Smile Based On Esthetics

S.NO	GRADES FOR SMILE
1.	EXCELLENT (ESTHETICALLY BEST)
2.	VERY GOOD (ABOVE AVERAGE)
3.	GOOD (AVERAGE)
4.	BAD (ESTHETICALLY POOR)

TABLE 2 – Grouping For 1st Ideal Smile

GROUP 1
1A – IDEAL (P3)
1B – Central incisor Edited (P8)
1C – Lateral incisor Edited (P1)
1D – Canine Edited (P6)

TABLE 3- Grouping For 2nd Ideal Smile

GROUP 2
2A – IDEAL (P5)
2B – Central incisor Edited (P4)
2C – Lateral incisor Edited (P7)
2D – Canine Edited (P2)

interpreting the statistical data, it was found that the clinical students are able to find the difference between ideal and edited smiles only in half of the samples. And the non clinical students, are not able to find the difference between ideal and edited smiles in half of the samples The ability to find the difference in the smiles between the clinical and non clinical students is clinically not much significant.

Discussion:

Ideal smile highly relies on symmetry and balance of facial and dental features. Gingival esthetics is one among them. Gingival zenith is the most highest point of gingival margin³. Although the gingival zenith seems to be very small factor, it greatly influences the smile⁴. The amount of gingival display of the patient is also important parameter for esthetics of the patient.^{5,8} The perception of esthetics differs for

TABLE 4 – P Value for the edited smiles of Group 1 and Group 2

	Groups	N	Mean Rank	p-value
P1	Non Clinical	53	54.23	0.053
	Clinical	67	65.46	
P2	Non Clinical	53	66.47	0.053
	Clinical	67	55.78	
P4	Non Clinical	53	69.58	0.005*
	Clinical	67	53.32	
P6	Non Clinical	53	54.86	0.092
	Clinical	67	64.96	
P7	Non Clinical	53	69.08	0.007*
	Clinical	67	53.71	
P8	Non Clinical	53	52.08	0.012*
	Clinical	67	67.16	



Fig. 1. Lateral incisor edited smile of group 1 (P1)



Fig. 2. Canine edited smile of group 2 (P2)



Fig. 3. Ideal smile of group 1 (P3)



Fig. 4. Central incisor edited smile of group 2 (P4)



Fig. 5. Ideal smile of group 2 (P5)



Fig. 6. Canine edited smile of group 1 (P6)



Fig. 7. Lateral incisor edited smile of group 2 (P7)



Fig. 8. Central incisor edited smile of group 1 (P8)

PROSTHETIC AND IMPLANT DENTISTRY

Official Publication of Indian Prosthodontic Society
Kerala State Branch

each common person and is not equivalent to the professional's knowledge about esthetics.⁶ To correlate esthetic relation with various gingival zenith levels, photographs with high gingival display and wide smile were taken⁷. Gingival zenith levels were modified between maxillary central incisors, lateral incisors and canine on both sides of arch and given to dental U.G clinical and non clinical students for analysis of esthetic smile, to prove whether that gold standard criteria's for esthetic smile is really always important for the good looking pleasant smile². On interpreting the results, it is evident that nonclinical students are able to appreciate the difference between the ideal and manipulated smiles to some extent and clinical students are not able to appreciate the difference between the ideal and manipulated smiles to certain extent.

Conclusion:

After, this study on the influence of gingival esthetics on the aesthetic perception of wide smile it was concluded that, There is no significant difference between the clinical and non clinical students in finding the difference between the ideal and manipulated smiles. The gingival factors have less influence on the esthetics of the smile when a person smiles widely. The

gold standard criteria for esthetic smile may be important but not all the time because the esthetic perception may vary among individuals.

References :

1. Pithon MM, Santos AM, de Andrade AC, Santos EM, Couto FS, da Silva Coqueiro R. Perception of the esthetic impact of gingival smile on laypersons, dental professionals, and dental students. *Oral surgery, oral medicine, oral pathology and oral radiology*. 2013 Apr 1;115(4):448-54.
2. Althagafi N. Esthetic smile perception among dental students at different educational levels. *Clinical, cosmetic and investigational dentistry*. 2021 May 7:163-72.
3. Patil AS, Ranganath V, Yerawadekar SA, Kumar CN, Sarode GS. Pink esthetics: a study on significant gingival parameters. *J Contemp Dent Pract*. 2020 Apr 1;21(2):207-10.
4. Pawar B, Mishra P, Banga P, Marawar PP. Gingival zenith and its role in redefining esthetics: A clinical study. *Journal of Indian Society of Periodontology*. 2011 Apr;15(2):135.
5. Sepolia S, Sepolia G, Kaur R, Gautam DK, Jindal V, Gupta SC. Visibility of gingiva-An important determinant for an esthetic smile. *Journal of Indian Society of Periodontology*. 2014 Jul;18(4):488.
6. Maniyar M, Kalia A, Mirdehghan N, Nene S, Bhagwagar P. Evaluation of the influence of gingival display on smile esthetics in Indian females-a computer-aided photographic analysis. *Journal of Indian Orthodontic Society*. 2018 Apr;52(2):100-5.
7. Ganji KK, Alam MK, Alanazi AF, Aldahali M. Facial profile based evaluation of gingival zenith position in maxillary central incisors among Saudi, Indian & Bangladeshi population. *The Saudi Dental Journal*. 2018 Oct 1;30(4):342-7.
8. Machado AW. 10 commandments of smile esthetics. *Dental Press Journal of Orthodontics*. 2014 Jul;19:136-57.