Influence of Gingival Display on Smile Esthetics

Pavan Kumar Mamillapalli¹, Vasu Murthy Sesham², Praveen Kumar Neela³, Shiva Prasad Mandalaju⁴, Sreekanth Keesara⁵, Abdul Rehman Ahmed Khan⁶

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¹Professor

²Professor & HOD

³Reader

^{4&5}Senior Lecturer

⁶Former PG Student

Department of Orthodontics,
Kamineni Inst of Dental Sciences,
Narketpally.

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Email for correspondence:

pavan.dr@gmail.com

ABSTRACT:

The objective of the present study is to assess which level of gingival exposure is considered more esthetic and to compare the differences in opinion among orthodontists, dentists and laypersons in relation to the gingival exposure for the smile esthetics. One photograph presenting well aligned teeth and a pleasing smile was selected for the study. By considering the patient's original photographs as ideal, manipulations were done with the Photoshop software by decreasing 4mm of gingival display, 2mm of gingival display and also increasing 4 mm and 2mm of gingival display. Chi square test was performed to find out whether any statistical significance among the three groups (Dentists, Orthodontists, Lay persons) was present. The results show that 2mm decrease of gingival display was considered as more aesthetic by all the three groups.

Key words: Smile esthetics, Gingival display, Esthetic harmony.

INTRODUCTION

Facial attractiveness has been suggested to have an influence on personality development and social interaction (Adams, 1977; Feingold, 1992; Thompson et al., 2004). The smile plays an important role in facial expression. Facial attractiveness and smile aesthetics are strongly related to each other. Individuals mainly focus on another person's eyes and mouth during interpersonal interaction (Miller, 1970), and the smile ranks second only to the eyes as the most important feature in facial attractiveness (Goldstein,

1969). Therefore, an attractive, well-balanced smile is a highly regarded treatment objective, along with creating a functional occlusion. An attractive smile depends not only on components such as tooth size, shape, colour, and position but also on the amount of visible gingivae and the framing of the lips (Van der Geld et al., 2007).¹

A 'gummy' smile results from a combination of factors such as vertical maxillary excess, increased overjet, increased overbite, a short upper lip, and a short incisor crown length (Allen, 1988).¹

Although many orthodontists and clinicians consider gingival smiles as non-desired, this characteristic might not necessarily be unaesthetic to the public eyes.²

Materials and Methods

After taking the informed consent, one photograph presenting well aligned teeth and a pleasing smile was selected for the study

Methodology

By considering the patient's original photographs as ideal, manipulations were done with the Photoshop software in the following manner:

The photographs were shown to various evaluators comprising of 150 people (50 orthodontists, 50 dentists and 50 lay persons) and their opinion was taken through a questionnaire asking "Which smile would you consider to be the best"? Give your opinion.

The opinions of all the evaluators were entered on a Microsoft Excel and sent for statistical analysis

OPINION

Influence of Gingival Display on Smile Esthetics

Name:

Designation:

Phone number:

Which smile would you consider to be the best?
Please write the respective alphabet: []

RESULTS

All the statistical analyses were performed with

a commercial software package (SPSS 20.0 software). Chi square test was performed to find out the presence of statistical significance among the three groups (Dentists, Orthodontists, Lay persons) (Table 1-4).

DISCUSSION

Esthetics denotes concern about beauty or appreciation of beauty.⁶ "Beauty truly lies in the eye of the beholder", and what is desirable to one might not be so to another.³ The perception of esthetics varies from person to person and is influenced by personal experiences and social environments.⁶ For the same reasons, there can be differences of opinion regarding beauty between laypersons and professionals. Diamond reported that what a person finds attractive has much to do with the qualities of the surrounding population; other environmental factors, such as education, are also involved.⁶ Smile esthetics have become a central concern for patients and Orthodontists because this is the primary reason that patients seek Orthodontic treatment and Orthodontists are now using this as a focus for treatment planning.⁵

From a psychological point of view, we can distinguish two dimensions in self-perception of the smile. The first dimension is perception of attractiveness of the smile. This perception is especially dened by the opinions of others and cultural norms. The social dimension (eld of social psychology) is relative to the history of culture. As cultures are changing, perception of attractiveness is changing too. The second dimension in self-perception of the smile is satisfaction with its appearance. This perception originates from the internal view, the inner experience of the individual itself: the individual dimension.⁴

Several studies about esthetic perceptions found that dentists, particularly orthodontists, are less tolerant than the general public for some dental conditions.⁷ Several authors evaluated the esthetic perception of various malocclusions, but little information is available about the perception of the effect of dental asymmetries on smile esthetics. So, the purpose of this study was to evaluate the

Table 1: Comparison of the ratings given by Dentists, Orthodontists and lay persons (p=0.001).

	A	B	C	D	E
Dentist	23	23	3	0	1
Orthodontist	10	39	0	0	0
Lay person	13	12	12	8	5

Chi square test was also performed to find out the presence of statistical significance among the two groups (Dentists and Orthodontists).

Table 2: Comparison of the ratings given by Dentists and Orthodontists (p=0.004).

	A	B	C	D	E
Dentist	23	23	3	0	1
Orthodontist	10	39	0	0	0

Chi square test was also performed to find out the presence of statistical significance among the two groups (Dentists and Lay persons).

Table 3: Comparison of the ratings given by Dentists and Lay persons (p=0.0001).

	A	B	C	D	E
Dentist	23	23	3	0	1
Lay person	13	12	12	8	5

Chi square test was also performed to find out the presence of statistical significance among the two groups (Orthodontists and Lay persons).

Table 4: Comparison of the ratings given by Orthodontists and Lay persons (p=0.001).

	A	B	C	D	E
Orthodontist	10	39	0	0	0
Lay person	13	12	12	8	5

influence of gingival display on smile esthetics by Orthodontists, Dentists and laypersons.

One photograph presenting well aligned teeth and a pleasing smile was selected for the study. By considering the patients original photograph as ideal, manipulations were done with the Photoshop software in the following manner: (A) Decreasing 4mm of gingival display from original patient's photograph, (B) Decreasing 2mm of gingival display from patient's original photograph, (C) Patient's original photograph, (D) Increasing 2mm of gingival display from patients original photograph, (E) Increasing 4mm of gingival display from patients

original photograph. The photographs were shown to various evaluators comprising of 150 people (50 orthodontists, 50 dentists and 50 lay persons) and their opinion was taken through a questionnaire asking "Which smile would you consider to be the best"? Give your opinion.

The results of the present study shows that of 50 orthodontists, 50 dentists and 50 laypersons, [23 dentists have considered photograph A as ideal smile photograph, where as the other 23 dentists have considered photograph B as ideal, photograph C was supported by 3 dentists and E by only 1 dentist].

When the ratings given by orthodontists were taken into consideration it shows that [10 orthodontists have considered photograph A as the ideal smile photograph, whereas remaining 40 orthodontists have considered photograph B as ideal]. Among the lay persons category [13 lay persons have considered photograph A as ideal, 12 have considered photograph B as ideal, other 12 have considered photograph C as ideal, photograph D is considered as ideal by 8 lay persons and E by remaining 5 persons].

When chi square test was applied to these ratings it showed the presence of statistical significance with ($p=0.001$) between the three groups that is Dentists-Orthodontists-Lay persons. The results of the present study also shows that the maximum ratings were given to Photograph B which had the gingival display in the range of 2 to 3mm, which shows 2mm of decreased gingival display from the original patients smile photograph that is photograph C which shows nearly 3 to 5 mm of gingival display.

CONCLUSION

The result of the present study concludes that the photograph B with 2 to 4mm of gingival display is considered as the ideal smile photograph

according to the maximum Orthodontists, Dentists and Lay persons.

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