ORIGINAL ARTICLE

EFFECT OF GENDER AND FACIAL PROFILES ON GINGIVAL DISPLAY

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ABSTRACT

The objective of the present study was to investigate the effect of gender and facial profiles on the percentage and the frequency of gingival display. This will help in clinically assessing the accurate gingival display that can be used in restoring the acrylic gingival tissues in the best esthetic zone in edentulous patients. It is a cross sectional study and was carried out at the Prosthodontic Department of Lahore Medical and Dental College, Lahore from 16th July 2014 to January 2015.

A total of 400 dentate subjects; 200 male and 200 females of age range 18 to 53 years were selected from the department of Prosthodontics, Lahore Medical and Dental College, Lahore. Informed consent and Demographic data was obtained. Subjects with intact maxillary anterior teeth and with healthy periodontal and gingival tissues were included in the study. However those undergone crown and bridge work on upper anterior teeth, interdental spacing, crowding or treated orthodontically were excluded. All the subjects having congenital or acquired orofacial deformities were also not included in the present study. Gingival display was noted by asking each participant with maximum smile. Gingival display was judged as either visible or not visible.

The results of the present study have shown that significantly more female participants were found to display gingiva during maximum smiles in contrast with their male counterparts. However no difference in gingival display was found in different facial profiles.

It was concluded that there were no significant effects of different facial profiles on gingival display during maximum smile. However gender does have a strong effect on the display of gingival tissues.

Key Words: *Gingival display, esthetics, smile, facial profiles, edentulisim.*

INTRODUCTION

An attractive smile is the result of collaboration of simile components plus a balance between the teeth and the gingival tissues.[1,2] For obtaining an esthetic smile in a completely edentulous patient the balance should be maintained between the size of the teeth and the display of gingiva[3] Maintaining a balance between the artificial teeth and associated gingival tissues is important for achieving an esthetic smile in an edentulous patient.[1,2] These patients present with loss of teeth and tissues. Dentists are confused that how appearance of a denture should be as to have pleasing facial esthetics.[4]

Gingival visibility during smiling presented important differentiation among gender groups in the maxillary anterior region, with female displaying more gingivae than their males' counterparts in the central incisor area.[4] Therefore, it is important for prosthodontics to control the esthetic effects of their treatment on smile design according to gender based variations.[2] This study will be used to access the correct amount of acrylic display in prosthodontics patients.

Literature has quoted such studies in different races.[4,5] We have conducted this study in Pakistani population so that we have norms according to gingival display of this race. This study was conducted to investigate the effect of gender and different profiles on amount of gingival display in the anterior region.

This study will be used to access the correct amount of acrylic display in Prosthodontic patients. This will result in placing the acrylic gingival tissues in best esthetic zone thus achieving better patient satisfaction.

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Furthermore it will also lessen the cost and effort of making a complete denture repeatedly for a single patient.[4,5]

METHODOLOGY

A total of 400 dentate subjects; 200 male and 200 females fulfilling the inclusion criteria were selected from the department of Prosthodontics, Lahore Medical and Dental College, Lahore. Informed consent and Demographic information (name, age, sex and contact) was obtained. Subjects with intact maxillary anterior teeth and with healthy periodontal and gingival tissues were included in the study. However subjects' undergone crown and bridge work on upper anterior teeth, interdental spacing, crowding or treated orthodontically were excluded. Gingival display was noted by asking each participant with maximum smile. Gingival display was judged as either visible or not visible while subjects were seated in a dental chair with the head and back in an upright position. The data was entered and analyzed in statistical software (SPSS version 17) a computer based software program. The quantitative variables, age was presented as mean and standard deviation. The qualitative variable like sex and gingival display were presented as frequency and percentage. Data was stratified for facial features (convex or straight) to control effect modifier. Data was presented separately in both male and female patients.

RESULTS

The mean age of subjects in this study was 29.608±11.298 year .Out of total 400 recruited subjects, 200(50%) were males while a majority of them 200(50%) were females. The mean age of females (28.045±9.554) was less than those of males (32.051±13.251) in the study. Majority of subjects showed a straight facial profile (250; 62.5%) whilst only 150 (37.5%) subjects had a convex facial profile. (Table 1)

Out of total 400 subjects 158 (39.5%) showed Gingival display whereas the rest of 242 (60.5%) did not show any gingival display. (Table 2) Using Chi-square test we observed there was association between gender and gingival display on smiling. (Table 3)

Out of 158 subjects who showed a gingival display, 92 (36.8%) subjects were those with a straight facial profile and 66(44%) subjects were those with a convex facial expression. Out of 242 subjects who did not have Gingival display during smile, 158 (63.2%) were those with a straight facial profile and rest of 84 (56%) subjects were those with a convex facial profile. There was no statistical association between facial profile and Gingival display (p-value= 0.154). (Table 4)

TABLE 1: FREQUENCY TABLE OF FACIAL PROFILE

	Frequency	Percent	Valid percent	Cumulative Percent
Convex	150	37.5	37.5	37.5
Straight	250	62.5	62.5	100.0
Total	400	100.0	100.0	

TABLE 2: FREQUENCY TABLE OF GINGIVAL DISPLAY

	Frequency	Percent	Valid percent	Cumulative Percent
Yes	158	39.5	39.5	39.5
No	242	60.5	60.5	100.0
Total	400	100.0	100.0	

TABLE 3: COMPARISON OF GINGIVAL DISPLAY ON SMILING IN MALE AND FEMALE SUBJECTS

		Gingival Display on Smiling		Total
		Yes	No	
Gender of subjects	Male	42 (21%)	158 (79%)	200 (100%)
	Female	116 (48.7%)	84 (42%)	200 (100%)
Total		158(39.5%)	242 (60.5%)	400 (100%)

Chi-square = 57.286 p-value = 0.0000

TABLE 4: COMPARISON OF FACIAL PROFILE AND GINGIVAL DISPLAY ON SMILING

		Gingival Display on Smiling		Total
		Yes	No	
Facial profile	Convex	66 (44%)	84 (56%)	150 (100%)
	Straight	92 (36.8%)	158 (63.2%)	250 (100%)
Total		158 (39.5%)	242 (60.5%)	400 (100%)

Chi-square = 2.034 p-value = 0.154

DISCUSSION

Rehabilitation for edentulous patients includes combination of function, comfort, esthetics and phonetics. New materials and techniques haves made the treatment of completely edentulous patients esthetically more successful. For an esthetically successful denture it is mandatory to place the lost teeth and tissues in the best esthetic zone. Esthetically satisfactory prostheses add in increased psychological success factors.[2,6]

The displayed amount of anterior teeth and gingival visibility are muscle determined factors. It changes from patient to patient. This study showed the variability of these factors in both genders[7] as demonstrated by the previous study.

In this study gingival visibility was compared with gender of patients. Out of total 158 subjects showing gingival display, 90% were females and only 10% were males. A very significant statistical association was found between gingival display and gender. Al-Jabrah[5] and Al-Habahheh[8] studies are in accordance with present study. In contrast to this study Lavelle[9] found that there is no gender difference in gingival visibility.

In present study gingival display is also compared with facial profile. Subjects who showed a gingival display, 58% subjects were those with a straight facial profile and 42% subjects were those with a convex facial expression. Subjects who did not have gingival display during smile, 65% were those with a straight facial profile and rest of 35% subjects was those with a convex facial profile. There was no statistical association between facial profile and gingival display.[10] These results are in accordance with Ahmad[11] and Gillen[12] studies. The results of current study have revealed that more female subjects displayed gingiva during maximum smiling in contrast to male counterparts. These results are matching with previous studies Vig[13], Ahmad[14] and Tarantili.[15]

In removable prosthesis, the artificial teeth arrangement, beside with other guidelines to occlusal plane level should be assessed clinically for correct tooth length and gingival display on the basis of individual smiling characteristics.[4,16] Gender difference concerning the displayed anterior teeth and related gingivae at maximum smiling positions should be measured on an individual basis while restoring teeth. This study showed the requirements for good esthetic in restoring maxillary incisors and especially the contouring and waxing of gingiva in anterior region in removable and fixed prosthesis.

CONCLUSION

From the results of the present study following conclusions were drawn

1 Significantly more female participants were found to display gingival tissues during maximum smiles in contrast with their male counterparts. There is a strong association between the gender and the amount of gingival display in big city of Pakistan.

2 However no difference in gingival display was found in different facial profiles. There is no role of different facial profiles on the display of gingiva in Pakistani population.

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3 Sajid Naveem:	Supervisor, proof reading