



Comparison of Facial Profile Preference between Male and Female Laypersons

Tuangporn Srisoogcharoen, Boonsiva Suzuki, Eduardo Yugo Suzuki
Department of Orthodontics, Faculty of Dentistry, Bangkokthonburi University, Thailand



Introduction

The face is a key to human physical attractiveness.¹ Facial attractiveness is a main motive for encouraging patients to seek oral care.² Orthodontic treatment can influence facial aesthetics in many ways, such as by providing well-aligned teeth, an attractive smile, and a pleasing facial profile.³

Aim of Study

The purpose of this study was to compare preferred facial profiles of subjects with bimaxillary protrusion produced by a 3-D facial light scanner between male and female laypersons.

Materials and Methods

Lateral cephalograms and digital 3-D facial images (Morpheus3D, Seoul, Korea) (Fig 1) were recorded for 40 Thai subjects aged 17-39 years with skeletal Class I or mild skeletal Class II jaw relationships, bimaxillary dental protrusion, and no previous orthodontic treatment. The 3-D images were modified to retrocline the maxillary central incisors 30° and retrude them 3 mm. The 3-D images were captured at 0%, 25%, 50%, 75%, and 100% of profile change. The mandibular central incisors were correspondingly retroclined and retruded in harmony with the maxillary central incisors by maintaining normal overjet and overbite. The images were printed using a high-quality printer (Ricoh Aficio SP 250DN Color laser printer, Tokyo, Japan). Each image series consisted of both 45° and 90° lateral profile images (Fig 2). Twenty-one male and 24 female laypersons viewed all images of the subjects and ranked the facial profile of each subject with a score of 1 for the most preferred to 5 for the least preferred. The position of the upper and lower lips in relation to the E-line was measured on the most preferred images.

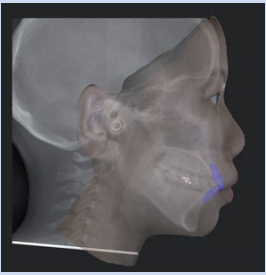


Fig 1. Morpheus3D



Fig 2. Example of a series of modified subject images

The data analysis was calculated using SPSS (IBM SPSS statistics 22.0, Armonk, NY, USA). Mode was calculated for the most preferred profile in each image series for both male and female laypersons. The most preferred profile between male and female laypersons was tested using Spearman's correlation and the Chi-Square test. The preference for upper and lower lip to E-line position between male and female laypersons was tested using the paired samples t-test.

Results

The most preferred facial profile between male and female laypersons had a moderately positive correlation ($r=0.5$, $n=40$, $P<0.01$). The majority of laypersons chose the images at 50% of profile change as the most preferred (Fig 3). The most preferred upper lip to E-line position of male, female, and all laypersons were -1.95 mm, -2.07 mm, and -2.01 mm, respectively (Fig 4). The most preferred lower lip to E-line position of male, female, and all laypersons were -1.49 mm, -1.65 mm, and -1.57 mm, respectively (Fig 5). There were no significant differences in the most preferred facial profile or lip to E-line position between male and female laypersons ($P>0.05$) (Tables 1 and 2).

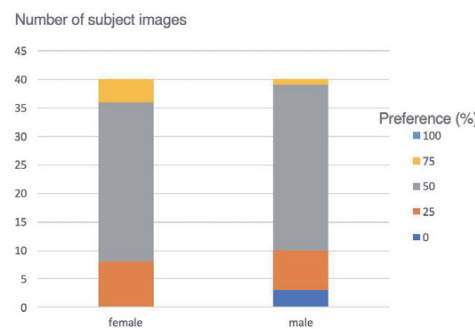


Fig 3. The most preferred facial profiles

Table 1. The most preferred facial profile between male and female laypersons

Group	Preference		Total
	50%	Others	
Male	29	11	40
Female	28	12	40
Total	57	23	80

Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.061	1	.805

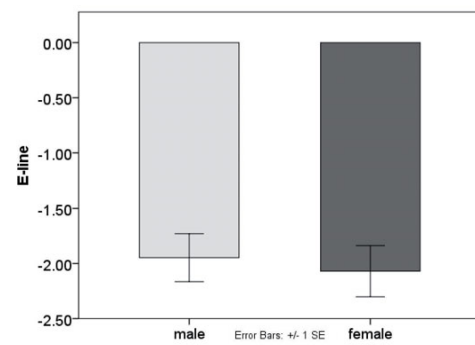


Fig 4. Means and standard errors for upper lip to E-line position

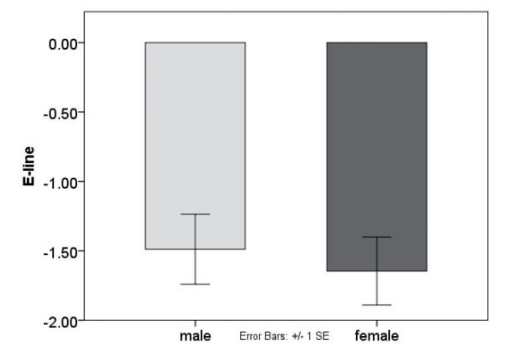


Fig 5. Means and standard errors for lower lip to E-line position

Table 2. Paired samples test between male and female laypersons, (a) upper lip to E-line position, (b) lower lip to E-line position

a	Pair 1	male_mean - female_mean	Paired Differences				t	df	Sig. (2-tailed)	
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower				Upper
			.12250	.64197	.10150	-.08281	.32781	1.207	39	.235

b	Pair 1	male_mean - female_mean	Paired Differences				t	df	Sig. (2-tailed)	
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower				Upper
			.15725	.88791	.14039	-.12672	.44122	1.120	39	.270

Conclusions

Although the female laypersons preferred more retruded upper and lower lips to E-line positions than the male laypersons, no significant differences were observed between the two groups. The male and female laypersons preferred the same facial profiles and slightly retruded upper and lower lip to E-line positions.

References

- Riggio RE, Widaman KF, Tucker JS, Salinas C. Beauty is more than skin deep: components of attractiveness. *Basic and Applied Psychology*. 1991;12:423-429.
- Dorsey J, Korabik K. Social and psychological motivations for orthodontic treatment. *Am J Orthod*. 1977;72:460-467.
- Abu Arqoub SH, Al-Khateeb SN. Perception of facial profile attractiveness of different antero-posterior and vertical proportions. *Eur J Orthod*. 2011;33(1):103-111.