Avicenna J Dent Res. 2017 December; 9(4):e60362. doi: 10.5812/ajdr.60362.

Published online 2017 December 31. **Research Article**

Iranian Viewpoint about Various Attractiveness Indices of Rhinoplasty in comparison with International Standards

Ali Heidari,[1] Mohammad Reza Jamalpour,[1] Fariborz Faghihi,[1,*] and Farshid Vahdatinia[2]

[1]Department of Oral and Maxillofacial Surgery, Dental Faculty Hamadan University of Medical Sciences, Hamedan, Iran
[2]Dental Research Center, Hamadan University of Medical Sciences, Hamadan, Iran

[*]*Corresponding author*: Fariborz Faghihi, DDs, Department of Oral and Maxillofacial Surgery, Hamadan University of Medical Sciences, Hamadan, Iran. Tel: +98-9122217218, E-mail: faghihifariborz@gmail.com

Received 2017 August 16; **Accepted** 2017 December 03.

Abstract

Background: Achieving a high facial attractiveness is the main reason why Iranians tend to undergo such a surgery.
Objectives: Accordingly, the current study aimed at investigating the relationship between age, gender, education level, and perceived attractiveness of various nose profiles.
Methods: Various nose profiles were created by making changes in the 4 variables of the nose including alar width, tip shape, tip projection, and columella. Three images were provided in respect to each variable; a nose with a standard value, a nose with a more than standard value, and a nose with a lower than standard value. A total of 400 people (200 males and 200 females) were asked to rank each set of images based on their perceived attractiveness. In the next step, the effect of various factors such as age, gender, and education level on the perceived attractiveness was assessed. Chi-square test and SPSS software were utilized to perform statistical analyses.
Results: A standard profile had the highest level of attractiveness among participants. Moreover, profiles with values higher than the standard were the least attractive. There was no significant association between gender of participants and the perceived attractiveness of the nose profiles. The associations between education level and the perceived attractiveness of such variables as alar width in males, tip shape of males, columella in males, and tip projection in females were significant.
Conclusions: In conclusion, Iranian people prefer the average and standard nose. Age and gender had no effect on the perceived nose attractiveness, while the effect of education level was significant.

Keywords: Rhinoplasty, Nose Profile, Beauty, Perceived Attractiveness

1. Background

Facial attractiveness is the main factor affecting many aspects of human lives. It has a predominant effect on self-confidence, the way people interact to each other, academic success, etc. (1, 2). Therefore, people are always looking for a more pleasant face. Nose is the most prominent element of face and plays an important role in the facial attractiveness. The anatomical structure of the nose differs from one geographical area to another. Due to the genetic and racial issues, the humped nose is of high prevalence among Iranian population (3). Unfortunately, many young Iranians are not satisfied with such a nose type; consequently, achieving a more beautiful facial profile is the main reason why Iranian people have a high tendency toward rhinoplasty (4, 5).

On the other hand, attractiveness and beauty are an abstract concept; hence, different people have different criteria in this regard and finding a consensus on the most attractive face and nose profile is not an easy goal to achieve (6). While some of the previous studies showed that a face composed of elements with average dimensions is the most attractive one (7), the averageness hypothesis is rejected by some other studies (8), and there does not seem to be a consensus on this issue (6). Moreover, previous studies demonstrated that factors such as age, gender, race, education level, occupation, social trends, and other similar ones may affect the perception of people toward attractiveness and beauty (6, 9-11). Therefore, it would not be surprising if what is perceived as a beautiful face in one society or population be considered attractive in another society or population.

Considering the high prevalence of rhinoplasty among Iranian people and the lack of consensus and even raw data on the ideal dimensions of a beautiful and attractive nose, it seemed necessary to investigate the attractiveness criteria among such a population.

Table 1. Categorization of Participants Based on Age, Gender, and Education Level

Variable	Group	Number of Participants in Each Group (%)
Gender	Male	200 (50)
	Female	200 (50)
Age	Less than 30 years	181 (45.25)
	Above 30 years	219 (54.75)
Education level	Lower than diploma	70 (17.5)
	Diploma or higher	330 (82.5)

2. Objectives

Accordingly, the current study aimed at investigating the attractiveness of various nose shapes created by changing various nose related variables to find out which shapes are more attractive among Iranian people.

3. Methods

The current cross sectional study was conducted among common non-dentist people in Hamadan, Iran, in 2017. The study population consisted of 400 common non-dentist persons (200 male and 200 female) within the age range of 16 to 60 years.

Various nasal shapes were created by changing 4 dimensions of the nose, including alar width, tip shape, columella show, and tip projection. This step of the study was performed by utilizing Adobe Photoshop software package. At first, the standard values of these dimensions were extracted from the reference books, then by increasing and decreasing the standard values of each dimension, 3 images were created; lower than standard, standard, and higher than standard. In the next step, the participants were asked to rank these 3 images based on their perceived attractiveness.

In the following section, a brief description is provided for each variable and the associated images.

- Alar base width: The nasal shapes of images created by changing this dimension for males and females are presented in Figure 1. The images located in the middle of upper and lower rows present the standard shape of alar base width for females and males, respectively. The alar base width of images located on the left of the Figure is 20% lower than those of the standard views, and the alar base width of images located on the right of the Figure is 20% higher than those of the standard views.

- Tip shape: The nasal shapes created by changing this dimension for males and females are presented in Figure 2. The images located on the middle of upper and lower rows present the standard view of tip shape for females and males' noses, respectively (tip width is equal to 8 mm). The tip width of images located in the left is 4 mm shorter than those of the standard views, and the tip width of images located on the right is 4 mm wider than those of the standard nasal shape.

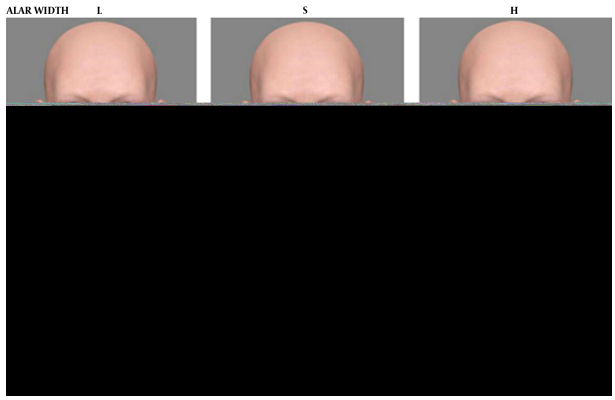

Figure 1. Nose Views Created by Changing the Alar Base width

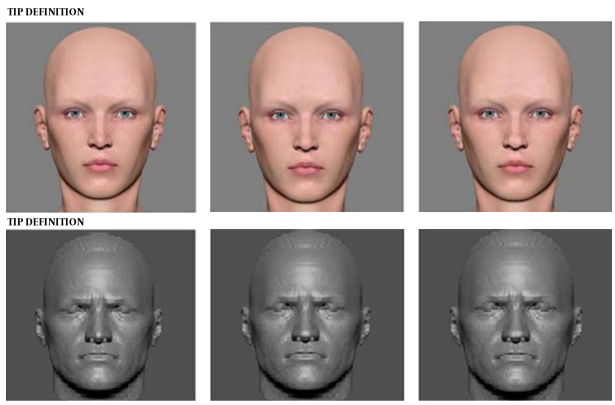

Figure 2. Nose Views Created by Changing the Tip Width

- Columella: The nasal shapes created by changing this variable are presented in Figure 3. The lower than standard shape was created by decreasing the standard columella up to 2 mm, and the higher than standard shape was created by increasing the standard columella up to 2 mm.

- Tip projection: Various nasal shapes created by changing this dimension are presented in Figure 4. Similar to other Figures, the 2 images located on the left side of this Figure (the first image of upper and lower rows) have a tip projection 10% lower than those of standard profiles. Whereas, the tip projection of images located on the right

Table 2. The Most Attractive Nose Shape in Males[a]

Variable	Selected as the Best Nose Shape				Total
	Lower Than Standard	Standard	Higher Than Standard	No Difference	
Alar width	216 (54)	161 (40.25)	23 (5.75)	0	400 (100)
Tip shape	109 (27.25)	252 (63)	32 (8)	7 (1.75)	400 (100)
Columella	105 (26.25)	241 (60.25)	23 (5.75)	31 (7.75)	400 (100)
Tip projection	81 (20.25)	307 (76.75)	10 (2.5)	2 (0.5)	400 (100)

[a]Values are expressed as No. (%).

Table 3. The Most Attractive Nose Shape in Females[a]

Variable	Selected as the Best Nose Shape				Total
	Lower Than Standard	Standard	Higher Than Standard	No Difference	
Alar width	149 (37.25)	231 (58.25)	5 (1.25)	13 (3.25)	400 (100)
Tip shape	101 (25.25)	281 (70.25)	7 (1.75)	11 (2.75)	400 (100)
Columella	126 (31.5)	234 (58.5)	18 (4.5)	22 (5.5)	400 (100)
Tip projection	131 (32.75)	228 (57)	39 (9.75)	2 (0.5)	400 (100)

[a]Values are expressed as No. (%).

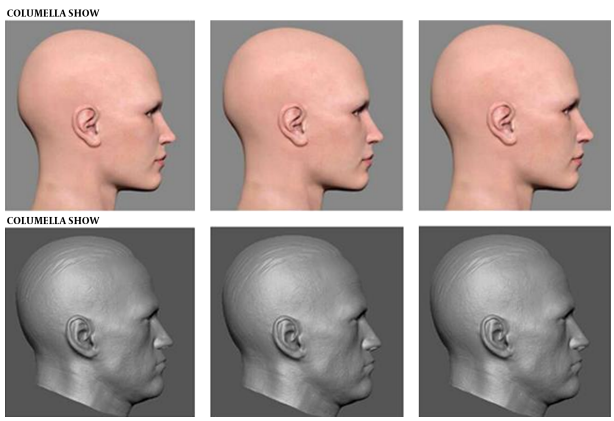

Figure 3. Nose Profiles Created by Changing the Status of Columella

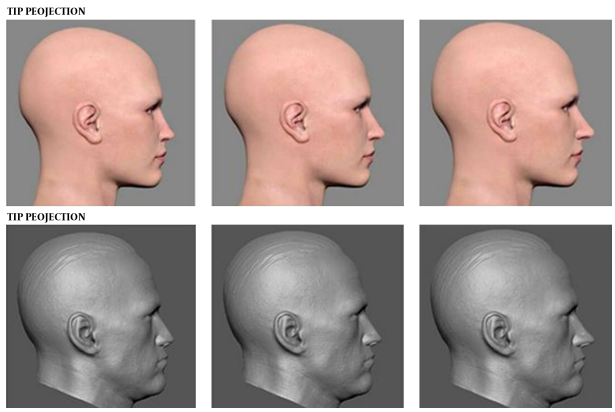

Figure 4. Nose Profiles Created by Changing the Status of Tip Projection

side of the Figure is 10% higher than those of standard profiles, while the middle images present the standard profiles for females and males' noses.

The images were shown to the participants and they were asked to rank each set of images based on their attractiveness. They also could express: "I think all the images are the same", if they perceived all the images had an equal attractiveness.

The demographic and personal information of participants were collected using a questionnaire simply asking their age, education level, and gender.

As mentioned before, the current study assessed the association between perceived level of attractiveness and 3 variables of age, gender, and education level. As explained before, the participants included 200 males and 200 females. Moreover, to evaluate the association between education level and the perceived attractiveness of various nasal views, the participants were categorized into 2 groups: the first group consisted of people with education lower than high school diploma, and the second

Table 4. The Association Between Gender and Attractiveness of Various Profiles and Face Views[a]

Variable	Male Face			P Value
	State	Gender		
		Male	Female	
Alar width	Lower than standard	103 (51.8)	113 (56.8)	0.493
	Standard	83 (41.7)	77 (38.7)	
	Higher than standard	13 (6.5)	9 (4.5)	
Tip shape	Lower than standard	53 (27)	56 (28.4)	0.53
	Standard	124 (63.3)	128 (65)	
	Higher than standard	19 (9.7)	13 (6.6)	
Columella	Lower than standard	62 (34.1)	43 (22.2)	0.061
	Standard	109 (59.9)	132 (71.6)	
	Higher than standard	11 (6)	12 (6.2)	
Tip projection	Lower than standard	44 (22.1)	37 (18.6)	0.682
	Standard	150 (75.4)	157 (78.9)	
	Higher than standard	5 (2.5)	5 (2.5)	
	Female Face			
Alar width	Lower than standard	73 (37.6)	76 (39.4)	0.862
	Standard	118 (60.8)	115 (59.6)	
	Higher than standard	3 (1.6)	2 (1)	
Tip shape	Lower than standard	53 (27.5)	48 (24.5)	0.379
	Standard	135 (69.9)	146 (74.5)	
	Higher than standard	5 (2.6)	2 (1)	
Columella	Lower than standard	65 (34.9)	61 (31.8)	0.795
	Standard	112 (60.2)	122 (63.6)	
	Higher than standard	9 (4.9)	9 (4.6)	
Tip projection	Lower than standard	69 (34.7)	62 (31.2)	0.594
	Standard	109 (54.8)	119 (59.8)	
	Higher than standard	21 (10.5)	18 (9)	

[a]Values are expressed as No. (%).

group with the education level of high school diploma or higher. Furthermore, to assess the effect of age, the participants were categorized into 2 groups; the first group consisted of people with less than 30 years old and the second group included the ones with 30 years old or above.

After collecting the required data, the analyses were performed using chi-square test with SPSS software version 20.

It should be mentioned that the study was approved by the ethical committee of Hamadan University of Medical Sciences and participants were assured that their data were kept confidential.

4. Results

As explained previously, 400 common non-dentist people, 200 males and 200 females, with the age range of 16 to 60 years participated in the current study. The mean age of male participants was 30.98 $\pm$ 7 years, and the mean age of female participants was 29.41 $\pm$ 6.77 years. The participants were categorized into 2 groups based on their age range; the first group consisted of people less than 30 years old (45.25% of all participants), and the second group included the ones with 30 years old and above (54.75% of participants). Moreover, the participants were categorized into 2 groups based on their education; the first group included people with the education level lower than high school diploma, and the second group included the ones with high school diploma and above. The number of people in each group is presented in Table 1.

Tables 2 and 3 present the most attractive nasal shapes for males and females, accordingly; nasal shapes created based on the standard values of all variables, i e, alar width, tip shape, columella, and tip projection were the most attractive ones for both males and females. Moreover, the current study results indicated that the nasal shape with higher than the standard dimensions were the least attractive ones and received the lowest scores from the partici-

Table 5. The Association Between Education Level and Attractiveness of Various Nasal Shapes[a]

Variable	Male Face			P Value
	State	Education Level		
		Higher Than Diploma	Lower Than Diploma	
Alar width	Lower than standard	39 (55.7)	177 (54)	0.007
	Standard	22 (31.4)	138 (42.1)	
	Higher than standard	9 (12.9)	13 (3.9)	
Tip shape	Lower than standard	29 (41.4)	81 (24.7)	0.000
	Standard	29 (41.4)	224 (68.3)	
	Higher than standard	12 (17.2)	22 (7)	
Columella	Lower than standard	27 (38.6)	88 (26.8)	0.043
	Standard	35 (50)	216 (65.8)	
	Higher than standard	8 (11.4)	24 (7.4)	
Tip projection	Lower than standard	15 (21.4)	66 (20.1)	0.549
	Standard	52 (74.3)	255 (77.7)	
	Higher than standard	3 (4.3)	7 (2.2)	
	Female Face			
Alar width	Lower than standard	25 (35.7)	124 (37.8)	0.943
	Standard	42 (60)	191 (58.2)	
	Higher than standard	1 (1.4)	4 (1.2)	
Tip shape	Lower than standard	22 (21.4)	79 (24.1)	0.322
	Standard	45 (64.3)	236 (72)	
	Higher than standard	2 (2.9)	5 (1.9)	
Columella	Lower than standard	28 (40)	98 (29.9)	0.203
	Standard	36 (51.4)	198 (60.1)	
	Higher than standard	2 (2.8)	16 (4.)	
Tip projection	Lower than standard	34 (48.6)	97 (29.6)	0.009
	Standard	31 (44.3)	197 (60)	
	Higher than standard	5 (7.1)	34 (10.4)	

[a]Values are expressed as No. (%).

pants.

As already explained, the current study mainly aimed at assessing the association between gender and the perceived attractiveness toward nasal shapes. The results of this section are presented in Table 4. According to this Table there was no significant association between gender and attractiveness of nasal shapes in any of the variables both in males and females ($P > 0.05$).

Furthermore, the association between the education level of participants and the perceived attractiveness of nasal shapes are presented in Table 5. As indicated in this Table, the associations between the education level and attractiveness of nasal shapes created by changing such variables as alar width in males, tip shape in males, columella in males, and tip projection in females were significant ($P < 0.05$).

Table 6 presents the association between age and the perceived attractiveness of various nasal shapes. According to the statistical analyses performed in this section of the study, there were no significant associations between age and the perceived attractiveness of the nasal shapes created by changing the variables ($P > 0.05$).

5. Discussion

The prevalence of humped nose is high among Iranians; hence, they have a high tendency toward rhinoplasty to seek a more attractive and beautiful face. Beauty is an abstract concept and different people perceived it differently. The current study aimed at assessing the association between attractiveness of various nose shapes and factors such as age, gender, and education level.

The results of the current study demonstrated that the most attractive nose shapes had standard dimensions; whereas, the least attractive ones were those with dimensions higher than the standard values. The current study results were in line with those of Naini et al. (12, 13), as they reported the average nasolabial angle was the most

Table 6. The Association Between Education and Attractiveness of Various Nasal Shapes[a]

Variable	Male Face			P Value
	State	Age		
		Less Than 30 Years	Above 30 Years	
Alar width	Lower than standard	99 (55.3)	117 (53.4)	0.922
	Standard	70 (39.1)	90 (41.1)	
	Higher than standard	10 (5.6)	12 (5.6)	
Tip shape	Lower than standard	46 (25.7)	63 (29.4)	0.373
	Standard	115 (64.2)	137 (64)	
	Higher than standard	18 (10.1)	14 (6.6)	
Columella	Lower than standard	42 (25.2)	63 (31.2)	0.287
	Standard	112 (67)	129 (63.9)	
	Higher than standard	13 (7.8)	10 (4.9)	
Tip projection	Lower than standard	35 (19.5)	46 (21)	0.602
	Standard	138 (77.1)	169 (77.2)	
	Higher than standard	6 (3.4)	4 (1.8)	
	Female Face			
Alar width	Lower than standard	68 (37.8)	81 (39.1)	0.915
	Standard	110 (61.1)	123 (59.4)	
	Higher than standard	2 (1.1)	3 (1.5)	
Tip shape	Lower than standard	43 (25)	58 (26.7)	0.923
	Standard	126 (81.6)	155 (71.4)	
	Higher than standard	3 (1.7)	4 (1.9)	
Columella	Lower than standard	63 (37.1)	63 (30.3)	0.913
	Standard	101 (59.4)	133 (63.9)	
	Higher than standard	6 (3.5)	12 (5.8)	
Tip projection	Lower than standard	59 (32.8)	72 (33)	0.992
	Standard	103 (57.2)	125 (57.3)	
	Higher than standard	18 (10)	21 (9.7)	

[a]Values are expressed as No. (%).

attractive one, and the level of attractiveness decreased as the angle increased. The current study results were also in agreement with those of McArdle et al. (14); they found that the least attractive nose shapes were the ones with an increased nose projection. The current study results were also consistent with those of Valentine et al. (15), as they reported attractive nose shapes were the ones with average dimensions. In total, results of the current study were in line with the averageness hypothesis, suggesting that Iranian people were more attracted to the average shape of nose.

The associations between gender of participants and attractiveness of alar width, tip shape, columella, and tip projection in both males and females were not significant. It was emphasized by several studies that the relationship between gender and perceived facial attractiveness was not significant (16-18); whereas, some studies found a significant relationship between the 2 variables (19-21). There is a need for further studies considering the effect of racial and geographical factors.

The current study found a significant relationship between education level and nose shape attractiveness. Many studies demonstrated a significant relationship between education level and perceived facial attractiveness (19, 22, 23).

The results of the current study also indicated no significant relationship between age and perceived nasal shape attractiveness. Most previous studies also found no significant relationship between age and perceived facial attractiveness (22, 24, 25).

5.1. Conclusion

In conclusion, Iranian people preferred the average and standard nose. Age and gender had no effect on the perceived nose attractiveness, while the effect of education level was significant.

Acknowledgments

The authors would like to extend their gratitude to the deputy of research at Hamadan University of Medical Sciences for the financial support.

Footnote

Financial Disclosure: The authors declared no conflict of interests.

References

1. Algozzine B. Perceived attractiveness and classroom interactions. *J Exp Educ*. 2015;**46**(1):63–6. doi: 10.1080/00220973.1977.11011612.
2. Boyatzis CJ, Baloff P, Durieux C. Effects of perceived attractiveness and academic success on early adolescent peer popularity. *J Genet Psychol*. 1998;**159**(3):337–44. doi: 10.1080/00221329809596155. [PubMed: 9729839].
3. Hafezi F, Kouchakzadeh K, Naghibzadeh B. History and status of nose surgery. *Iran J Surg*. 2009;**17**(2):88–94.
4. Hwang HS, Kim WS, McNamara JJ. Ethnic differences in the soft tissue profile of Korean and European-American adults with normal occlusions and well-balanced faces. *Angle Orthod*. 2002;**72**(1):72–80. doi: 10.1043/0003-3219(2002)072lt;0072:EDITSTgt;2.0.CO;2. [PubMed: 11843277].
5. Pitak-Arnnop P, Hemprich A, Dhanuthai K, Yildirim V, Pausch NC. Panel and patient perceptions of nasal aesthetics after secondary cleft rhinoplasty with versus without columellar grafting. *J Craniomaxillofac Surg*. 2011;**39**(5):319–25. doi: 10.1016/j.jcms.2010.07.007. [PubMed: 20832328].
6. Borelli C, Berneburg M. "Beauty lies in the eye of the beholder"? Aspects of beauty and attractiveness. *J Dtsch Dermatol Ges*. 2010;**8**(5):326–30. doi: 10.1111/j.1610-0387.2009.07318_supp.x. [PubMed: 20537001].
7. Baudouin JY, Tiberghien G. Symmetry, averageness, and feature size in the facial attractiveness of women. *Acta Psychol (Amst)*. 2004;**117**(3):313–32. doi: 10.1016/j.actpsy.2004.07.002. [PubMed: 15500809].
8. Perrett DI, May KA, Yoshikawa S. Facial shape and judgements of female attractiveness. *Nature*. 1994;**368**(6468):239–42. doi: 10.1038/368239a0. [PubMed: 8145822].
9. Auger TA, Turley PK. The female soft tissue profile as presented in fashion magazines during the 1900s: a photographic analysis. *Int J Adult Orthodon Orthognath Surg*. 1999;**14**(1):7–18. [PubMed: 10337246].
10. Pogrel MA. What are normal esthetic values?. *J Oral Maxillofac Surg*. 1991;**49**(9):963–9. [PubMed: 1886024].
11. Cross JF, Cross J. Age, sex, race, and the perception of facial beauty. *Dev Psychol*. 1971;**5**(3):433–9. doi: 10.1037/h0031591.
12. Naini FB, Cobourne MT, Garagiola U, McDonald F, Wertheim D. Nasofacial angle and nasal prominence: A quantitative investigation of idealized and normative values. *J Craniomaxillofac Surg*. 2016;**44**(4):446–52. doi: 10.1016/j.jcms.2016.01.010. [PubMed: 26880014].
13. Naini FB, Donaldson AN, Cobourne MT, McDonald F. Assessing the influence of mandibular prominence on perceived attractiveness in the orthognathic patient, clinician, and layperson. *Eur J Orthod*. 2012;**34**(6):738–46. doi: 10.1093/ejo/cjr098. [PubMed: 21846874].
14. McArdle A, Young R, Kelly MH. Preferences for the white female nasal supratip break. *Ann Plast Surg*. 2012;**68**(4):366–8. doi: 10.1097/SAP.0b013e31823f3ca1. [PubMed: 22421480].
15. Valentine T, Darling S, Donnelly M. Why are average faces attractive? The effect of view and averageness on the attractiveness of female faces. *Psychon Bull Rev*. 2004;**11**(3):482–7. [PubMed: 15376799].
16. Abu Arqoub SH, Al-Khateeb SN. Perception of facial profile attractiveness of different antero-posterior and vertical proportions. *Eur J Orthod*. 2011;**33**(1):103–11. doi: 10.1093/ejo/cjq028. [PubMed: 20558590].
17. Kaipainen AE, Sieber KR, Nada RM, Maal TJ, Katsaros C, Fudalej PS. Regional facial asymmetries and attractiveness of the face. *Eur J Orthod*. 2016;**38**(6):602–8. doi: 10.1093/ejo/cjv087. [PubMed: 26666568].
18. O Neill K, Harkness M, Knight R. Ratings of profile attractiveness after functional appliance treatment. *Am J Orthod Dentofacial Orthop*. 2000;**118**(4):371–6. doi: 10.1067/mod.2000.109492. [PubMed: 11029730].
19. Gandhi P, Patel K, Arora PS, Patel N. The Perception of facial profile attractiveness by changing the lower facial vertical and antero posterior proportion. *Natl J Integr Res Med*. 2016;**7**(6).
20. Springer IN, Zernial O, Nolke F, Warnke PH, Wiltfang J, Russo PA, et al. Gender and nasal shape: measures for rhinoplasty. *Plast Reconstr Surg*. 2008;**121**(2):629–37. doi: 10.1097/01.prs.0000298095.18943.72. [PubMed: 18300984].
21. Springer IN, Zernial O, Warnke PH, Wiltfang J, Russo PA, Wolfart S. Nasal shape and gender of the observer: implications for rhinoplasty. *J Craniomaxillofac Surg*. 2009;**37**(1):3–7. doi: 10.1016/j.jcms.2008.04.001. [PubMed: 18485721].
22. Gomes GA, Tomita S, Guimaraes GS, Lima CF, Mosciaro MS, Simas TB. Aesthetic comparison of the ideal nasal radix height in Brazilians. *Braz J Otorhinolaryngol*. 2011;**77**(3):334–40. [PubMed: 21739008].
23. Lanier HB, Byrne J. How high school students view women, the relationship between perceived attractiveness, occupation, and education. *Sex Roles*. 1981;**7**(2):145–8. doi: 10.1007/bf00287800.
24. Lu Y, Zhang X. Analysis of facial profile preferences among the Chinese population. *Zhonghua Kou Qiang Yi Xue Za Zhi*. 2000;**35**(3):224–6.
25. Zylinski CG, Nanda RS, Kapila S. Analysis of soft tissue facial profile in white males. *Am J Orthod Dentofacial Orthop*. 1992;**101**(6):514–8. doi: 10.1016/0889-5406(92)70125-T. [PubMed: 1598891].