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RESEARCH ARTICLE

PERCEPTION OF FACIAL PROFILE ATTRACTIVENESS IN MIDDLE EAST POPULATION

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ABSTRACT

Background: Facial attractiveness plays an extremely important role in the human mating success and explains more variance in overall attractiveness than bodily attractiveness. Understanding patients perceptions of their dental appearance is an important aspect of patient management which may assist dentists in planning treatments that are acceptable to the patients leading to higher levels of patient satisfaction.

Aims of this study to assess if certain facial features count differently in people's opinion while assessing facial attractiveness in correlation with factors such as age, gender, culture and specific training in the Middle East.

Material and Methods: An illustrated questionnaire was sent as a Google survey form to 547 in the dental field in the Middle East. For each of the questions sets of images consisted of multiple variations of deviations mixed with the original photo in a 5-item multiple choice. The software program was used in order to obtain the illustrated images was Adobe Photoshop CS4. The original image was picked from the Internet after specific measurements of symmetry and proportions on several photographs to have a highest possible score in aesthetic measurement the photographs done by Dr. Chris Solomon had been used in the questionnaire after his permission.

Results: Percentage was used to Describe statistics to interpret the data gathered, using IBM SPSS 21. Analyzed the group of subjects observed that from 547 questioned persons, 346 (63.3%) were expert in aesthetic assessment (specialist related to aesthetic and senior students) and 201 (36.7%) were not-expert (specialist not related to aesthetic and junior students) and divided expert to 129 (35.5%) male, 217 (64.5%) female.

Conclusions: The horizontal facial lines Slight deviations are more visible and should be considered more important than facial symmetry. The female expert concentrates on the lower third of the face while the male concentrates on the upper third of the face. Expert and non-expert In the Middle East prefer the teeth as the most attractive element in the face.

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INTRODUCTION

Improvement of facial beauty is one of the most important elective goals of patients looking for teeth-related care. The lower one third of the face affects the perception of facial senses of beauty (Mack, 1996) During interaction of people, they focus concentrated mainly on the eyes of the other person and The mouth, with a little time spent on the other facial features (Ioi *et al*., 2009) Smile plays one of the most an important role in self-perception of an individual and is an important element of facial expression and physical attractiveness. A bright smile is related to intelligence, empathy, extroversion and creates its own perception towards facial attractiveness (van der Geld *et al*., 2007). Inferences of stable personal features during face perception are, mostly, derived from so-called invariant perceptual features or semantic codes (Haxby *et al*., 2000; Bruce and Young, 1986). Perception has been defined as the process by Governing the patterns of environmental stimuli and Explanation. It can be a variety of physical affected, Physiological and social Factors (Giddon, 1995) Some investigations compared the perception of profile attractiveness between ordinary people and

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professionals, others between different categories of doctors, while many of the studies looked at certain races and related to a group of people with the same race, culture, religion, etc. groups (Knight and Keith, 2005; De Smit and Dermaut, 1984) High correlations with attractiveness ratings suggest that symmetry along the vertical axis is generally thought about a pleasant facial feature (Pancherz *et al*., 2010; Edler, 2001) Also, the averageness, or prototypicality, of a face has been found to be an important thing that decides something to attractiveness judgments, even when keeping symmetry constant (Proffit and White, 1991, Tatarunaite *et al*., 2005, Mills, 1982) Some studies had been conduct on which facial attractiveness was assessed by showing to a panel of judges that present facial photographs or drawings, silhouettes or appearances and check attractiveness by giving certain ratings to these photographs based on their appearance (Orsini *et al*., 2006; Kenealy *et al*., 1989; Shaw *et al*., 1985; Albino *et al*., 1994) Previous studies that were limited to certain group of people with the same (race, culture, religion, etc). and racial groups included very small sample sizes, and the relationship between the size of the profile changes and attractiveness was not fully examined (Connor and Moshiri, 1985; Mantzikos, 1998).

Also, controversy still remains related to which of the lower facial vertical facial proportions is carefully believed to be more attractive and whether there is a difference in the perception of attractiveness of lower face height between male and female profile images. Many studies have figured out the perception of attractiveness and profile standards of Caucasians and African Americans (Thomas, 1979; Connor and Moshiri, 1985; Polk *et al*., 1995), Japanese (Miyajima *et al*., 1996; Mantzikos, 1998), Turkish (Turkkahraman and Gokalp, 2004), and Chinese (Maganzini *et al*., 2000) Many studies have figured out the perception of attractiveness and profile standards of Caucasians training in the assessment of attractiveness, are there are differences in perceptions between male and female observers? Are their deviations from symmetry or proportion that are perceived by observers as increasing appearance attractiveness, questions to which this study wanted to find answers.

Aims of this study to evaluate if certain facial features count differently in people's opinion while assessing facial attractiveness in correlation with factors such as age, gender, specific training and culture in the Middle East.

MATERIALS AND METHODS

An illustrated questionnaire was sent as a Google survey form to 547 in the dental field in the Middle East. The original image used from " E-fit computer creates faces of the most beautiful man and women in the world " The pictures are the result of a two- month-long study that asked people to put together a composite of the perfect face using the EFIT-V PhotoFit software used by UK police led by Dr Chris Solomon, a world expert in facial mapping. The photographs had been used in this study after his permission. To obtain the illustrated images Adobe Photoshop CS4 software program was used. The obtained images were grouped into four sets containing four modified photos together with the original image end with 5 photos each set in order to test the power of discrimination of minor asymmetries and disproportions in the perception of the tested persons. Two more questions (not related to the pictures) regarding the element of the face which they consider as the most important in facial aesthetic assessment and the conditions that need to be met by an aesthetic face were added. The questions and images were projected (without a legend) as the subjects chose the answers according to their opinion together with the personal data required, so the subjects did not know what the difference between Images was. (Appendix 1) Percentage was used to Describe statistics to interpret the data gathered, using IBM SPSS 21. Analyzed the group of subjects observed that from 547 questioned persons, 346 (63.3%) were expert in aesthetic assessment (specialist related to aesthetic and senior students) and 201 (36.7%) were not- expert (specialist not related to aesthetic and junior students) and divided expert to 129 (35.5%) male, 217 (64.5%) female.

Figure 1. Original image, link: https://www.kent.ac.uk/physical-sciences/news/front-page/efit-beauty.html

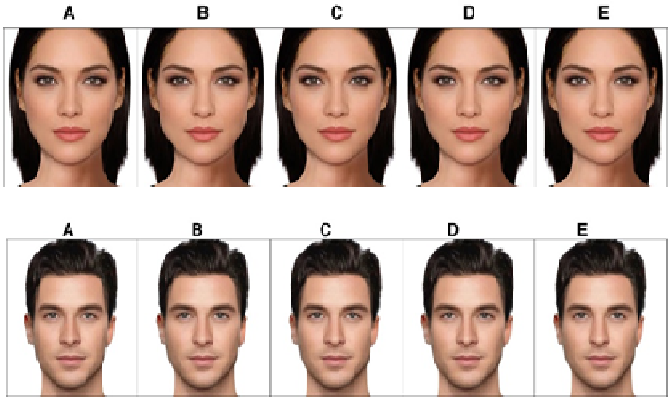

Figure 2. First set of enhanced images: Modifications from facial symmetry: A. Deviation of the nasal pyramid, B. Deviation of filtrum, C. Deviation of labial angle, D. Image of reference, E. Deviation of menton

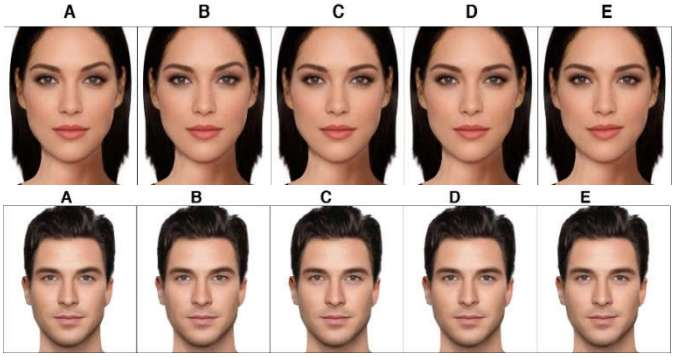

Figure 3. Second set of enhanced images: Deviations of horizontal facial lines: A. Deviation of the eye-brow line, B. Deviation of bipupilar line, C. Image of reference, D. Deviation of thesubnasal line, E. Deviation of labial line

RESULTS

In the 1st set for female image, Modifications from facial symmetry Figure (2) both of 30.3% expert and 28.9% non-expert found the most pleasing image A : Deviation of the nasal pyramid, and the lowest percentage of votes was obtained in image E: deviation of menton, both expert and non-expert had difficulties in finding the image of reference. Chi-square test were not statistically significant factors (Figure 4) 31.8% of male expert chose A: Deviation of the nasal pyramid as the most attractive element in the face, 8.5% chose E: deviation of menton as least attractive, while 29.5% of female expert chose A: Deviation of the nasal pyramid as the most pleasing image, 12.9% chose E: deviated menton as the least attractive image. Chi-square test were not statistically significant factors (Figure 5). For the 1st set of male images, Modifications from facial symmetry Figure (2) both of 31.2% expert and 27.9% non-expert found the most pleasing image C: the devotion of labial angle and the lowest percentage of votes was obtained in E: deviated menton. Chi-square test were not statistically significant factors (Figure 6). 30.2% of male expert chose A: Deviation of the nasal pyramid as the most attractive element in the face, and 8.5% chose E: deviation of menton as the lowest percentage of votes while 33.2% of female expert chose C: deviation of the labial angle as the most pleasing image and 9.7% chose E: deviation of menton as the least attractive element in the face. Chi-square test ($p = 0.009$) were statistically significant factors (Figure 7). In the 2nd set of female image Deviations of horizontal facial lines, Figure (3). both of 30.3% expert and 27.9% non-expert found C: the image of reference is the most pleasing image , and the lowest percentage of votes was obtained in image E: deviation of labial line. Chi-square test were not statistically significant factors (Figure 8)

Figure 4. 1st set of female image Expert vs Non Expert

Figure 5. 1st set of female image Male Expert vs Female Expert

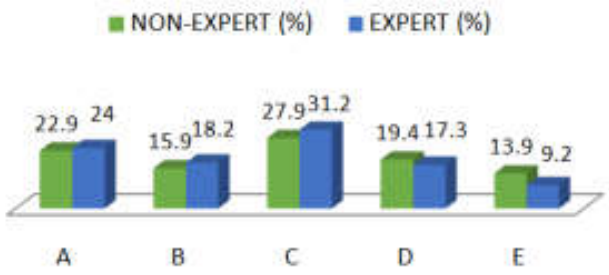

Figure 6. 1st set of male image Expert vs Non Expert

Figure 7. 1st set of male image Male Expert vs Female Expert

Figure 8. 2nd set of female image Expert vs Non Expert

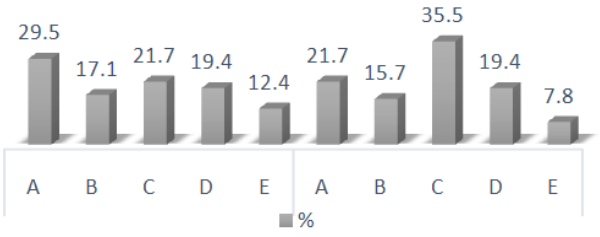

Figure 9. 2nd set of female image Male Expert vs Female Expert

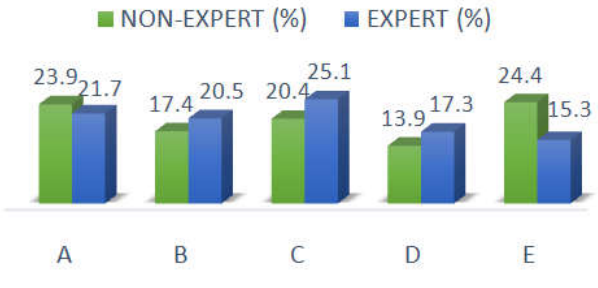

Figure 10. 2nd set of male image Male Expert vs Female Expert

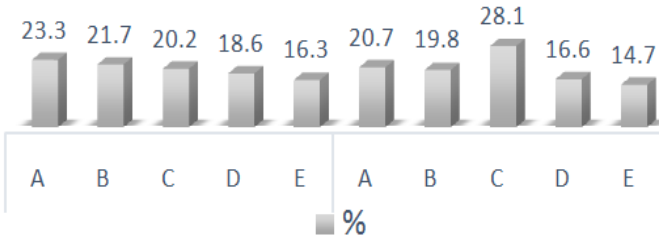

Figure 11. 2nd set of male image Male Expert vs Female Expert

Figure 12. Facial element Expert vs Non Expert

29.5% of male expert chose A: Deviation of the eyebrow line as the most attractive element in the face, and 12.4% chose E: deviation of labial line as the lowest percentage of votes while 35.5% of female expert chose C: image of reference as the most pleasing image and 7.8% chose E:deviation of labial line as the least attractive element in the face. Chi-square test were not statistically significant factors (Figure 9) For the 2nd set of male image Deviations of horizontal facial lines Figure (3), 25.1% expert chose C: image of reference as the most pleasing,15.3% chose E: deviation of labial line as the least attractive image, while 24.4% non-expert chose E: deviation of labial line,13.9% chose D: deviation of subnasal line as the least attractive image. Chi-square test were not statistically significant factors (Figure 10) 23.3% of male expert chose A: Deviation of the eyebrow line as the most attractive element in the face, 16.3% chose E: deviation of labial line as least attractive, while 28.1% of female expert chose C: image of reference as the most pleasing image, 14.7% chose E: Deviation of labial line as the least. Chi-square test were not statistically significant factors (Figure 11). The answers for question 10 identified the most important item in assessing the facial attractiveness of a person: 31.5% of the expert considered the teeth as being the most relevant, 30.9% of the total sample chose the eyes, 28.6% were of the opinion that nose are the most important and 9% have mentioned that the lips is the component which defines facial attractiveness.

In non-expert group the most important item in assessing the facial attractiveness of a person: 48.3 % of the expert considered the teeth as being the most relevant, 24.4% of the total sample chose the eyes, 20.4 % were of the opinion that nose are the most important, and 7% have mentioned that the lips is the component which. Chi-square test ($p = 0.002$) were statistically significant factors (Figure 12)

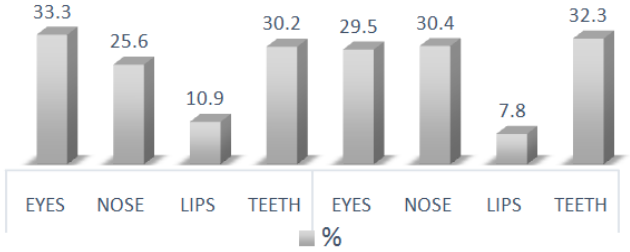

Figure 13. Facial element Male Expert vs Female Expert

Figure 14. Facial esthetic consideration Expert vs Non Expert

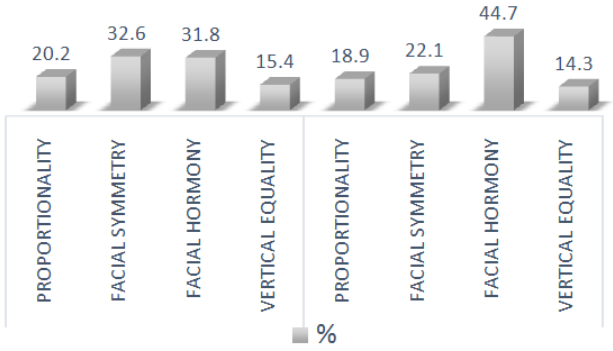

Figure 15. Facial esthetic consideration Male Expert vs Female Expert

For the female expert in identified the most important item in assessing the facial attractiveness of a person: 32.3% considered the teeth as being the most relevant, 30.4% of the total sample chose the nose, 29.5% were of the opinion that eyes are the most important and 7.8% have mentioned that the lips is the component which defines facial attractiveness and For the male expert in identified the most important item in assessing the facial attractiveness of a person: 33.3 % considered the eyes as being the most relevant, 30.2% of the total sample chose the teeth, 25.6% were of the opinion that nose are the most important and 10.9% have mentioned that the lips is the component which defines facial attractiveness. Chi-square test were not statistically significant factors (Figure 13). From the situations described in question number 11 regarding the condition required for facial aesthetics, 39.9% from the expert found Harmonious composition important, 19.4% considered important the proportionality between elements, 26% opted for facial symmetry, 14.7% agreed that there should be equality between facial thirds. And for the nonexpertgroup, 29.9% found proportionality between

elements, 26.9% considered important the Harmonious composition, 16.9 opted for facial symmetry, 26.4% agreed that there should be equality between facial thirds. Chi-square test ($p = 0.001$) were statistically significant factors (Figure 14) 31.8% of the male expert considered Harmonious composition important, 32.6% were in favor of a facial symmetry, 15.4% opted for the equality between facial thirds, and 20.2% chose to support proportionality between facial elements. For the female, a rate of 44.7% chose in favor of harmonious compositions of the elements, 22.1% considered that the facial symmetry is the most important, 14.3% opted for equality between facial thirds, and 18.9% pointed to significant proportionality between facial element. Chi-square test were not statistically significant factors (Figure 15)

DISCUSSION

Both expert and non-expert choose the image of reference in the female horizontal facial lines as the most pleasing image that indicate Slight deviations of the horizontal facial lines in the female image are more visible while in the male image horizontal facial lines the expert chose the reference image more than a non-expert. Slight deviations from facial symmetry are not too visible; therefore, even the expert had difficulties in identifying them. The primary requirement conditions of the face are the harmonious composition of the elements in the opinion of the majority, followed closely by proportionality between facial elements. Teeth considered to be the most important element linked to the attractiveness of a person's face, for both expert and non-expert, lips seem to have the smallest value, the recommendation for people interested in facial aesthetic to start the aesthetics treatment dentally first while the lips esthetic is the last. Male prefer the deviation of the eyebrow line as the most attractive deviation in both male and female images. The male expert concentrates on the upper third of the face in both male and female in female that maybe due to Middle East culture women cover their face with a veil while. The female expert concentrates on the lower third of the face. Expert and non-expert chose the image of Deviation of the nasal pyramid as the most pleasing in female and deviation of the labial angle in the male image while the deviation of the menton as the most displeasing in both female and male images. In this study, we consistent with (Mesaros *et al*., 2015) in this particular points on the female images had been used in this study that; the expert can detect the reference image more than non-expert in both facial symmetry and horizontal facial lines, the menton deviation is the most displeasing image. And we inconsistent with (Mesaros *et al*., 2015) in this particular points; result showed that teeth are the most attractive element in the face and the lips as the least while in their study the eyes are the most attractive element and the nose as the least.

Further research should be done with increasing the facial deviation modification and increases the sample size.

Conclusion

The horizontal facial lines Slight deviations are more visible and can be considered more important than facial symmetry. Expert and non-expert in the Middle East prefer the teeth as the most attractive element in the face. The female expert concentrates on the lower third of the face while the male concentrates on the upper third of the face.

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REFERENCES

Albino, J. E., Lawrence, S. D. & Tedesco, L. A. 1994. Psychological and social effects of orthodontic treatment. *Journal of Behavioral Medicine*, 17, 81-98.

Arqoub, S. H. A. & Al-Khateeb, S. N. 2011. Perception of facial profile attractiveness of different antero-posterior and vertical proportions. *The European Journal of Orthodontics*, 33, 103-111.

Artcr. Miyajima K, McNamara J A, Kimura T, Murata S, Iizuka T 1996 Craniofacial structure of Japanese and European- American adults with normalocclusions and well balanced faces. *American Journal of Orthodontics and Dentofacial Orthopedics*, 110: 431–438

Bruce, V. & Young, A. 1986. Understanding face recognition. British Journal of Psychology, 77, 305-327.

Connor A M, Moshiri F 1985 Orthognathic surgery norms for American black patients. *American Journal of Orthodontics,* 87: 119–134

De Smit, A. & Dermaut, L. 1984. Soft-tissue profile preference. *American Journal of Orthodontics*, 86, 67-73.

Dr Chris Solomon, 2015 E-FIT team define the face of beauty. https://www.kent.ac.uk/physical-sciences/news/front-page/efit-beauty.html

Edler, R. J. 2001. Background Considerations to Facial Aesthetics. Journal of Orthodontics, 28, 159-168.

Giddon, D. B. Orthodontic applications of psychological and perceptual studies of facial esthetics. Seminars in orthodontics, 1995. Elsevier, 82-93.

Haxby, J. V., Hoffman, E. A. & Gobbini, M. I. 2000. The distributed human neural system for face perception. Trends in cognitive sciences, 4, 223-233.

Ioi, H., Nakata, S. & Counts, A. L. 2009. Comparison of the influences of buccal corridors on smile esthetics between Koreans and Japanese. Orthodontic Waves, 68, 166-170.

Kenealy, P., Frude, N. & Shaw, W. 1989. An evaluation of the psychological and social effects of malocclusion: some implications for dental policy making. Social Science & Medicine, 28, 583-591.

Knight, H. & Keith, O. 2005. Ranking facial attractiveness. European Journal of Orthodontics, 27.

Mack, M. R. 1996. Perspective of facial esthetics in dental treatment planning. *The Journal of Prosthetic Dentistry*, 75, 169-176.

Maganzini A L, Tseng J Y K, Epsten J Z. 2000. Perception of facial esthetics by native Chinese participants by using manipulated digital imagery techniques. Angle Orthodontist 70: 393–399.

Mantzikos T 1998. Aesthetic soft tissue profile preferences among the Japanese population. *American Journal of Orthodontics and Dentofacial Orthopedics,* 114: 1–7.

Mesaros, A., Cornea, D., Cioara, L., Dudea, D., Mesaros, M. & Badea, M. 2015. Facial Attractiveness Assessment using Illustrated Questionnairers. *Clujul Medical*, 88, 73-78.

Mills, J. 1982. Principles and practice of orthodontics, Edinburgh, Churchill Livingstone.

Orsini, M. G., Huang, G. J., Kiyak, H. A., Ramsay, D. S., Bollen, A.-M., Anderson, N. K. & Giddon, D. B. 2006. Methods to evaluate profile preferences for the

anteroposterior position of the mandible. *American Journal of Orthodontics and Dentofacial Orthopedics*, 130, 283-291.

Pancherz, H., Knapp, V., Erbe, C. & Heiss, A. M. 2010. Divine proportions in attractive and nonattractive faces. *World Journal of Orthodontics*, 11.

Polk M S, Farman A G, Yancey J A, Gholston L R, Johnston BE, Regenitter F J 1995. Soft tissue profile: a survey of African American preference. *American Journal of Orthodontics and Dentofacial Orthopedics*, 108: 90–101

Proffit, W. R. & White, R. P. 1991. Surgical-orthodontic treatment, Mosby Inc.

Shaw, W. C., Rees, G., Dawe, M. & Charles, C. 1985. The influence of dentofacial appearance on the social attractiveness of young adults. *American Journal of Orthodontics*, 87, 21-26.

Tatarunaite, E., Playle, R., Hood, K., Shaw, W. & Richmond, S. 2005. Facial attractiveness: a longitudinal study. *American Journal of Orthodontics and Dentofacial Orthopedics*, 127, 676-682.

Thomas R G 1979. An evaluation of the soft-tissue facial profile in the North American black woman. American Journal of Orthodontics 76: 84–95.

Turkkahraman H, Gokalp H 2004. Facial profile preferences among various layers of Turkish population. *Angle Orthodontist*, 74: 640–647.

Van Der Geld, P. A. A. M., Oosterveld, P., Van Waas, M. A. J. & Kuijpers-Jagtman, A. M. 2007. Digital videographic measurement of tooth display and lip position in smiling and speech: Reliability and clinical application. *American Journal of Orthodontics and Dentofacial Orthopedics*, 131, 301.e1-301.e8.

APPENDIX (1)

Questionnaire:

The first question as a text-based answer and from 2-11 Questions continued as multiple-choice as it follows:

Q1- Name *optional* : Text : _____

Q2- Age: A) 19 – 24 years B) 25 – 30 years C) 31 – 40 years D) + 40 years

Q3- Gender: A) Female B) Male

Q4- Degree: * Specialist related to aesthetic (Resto / Prostho / Ortho) *

A) Dental Student (1st, 2nd, 3rd year) B) Dental Student (4th, 5th, 6th year)
C) Specialist related to aesthetic D) Specialist not related to aesthetic E) Other_____

Q5- Country: A) Saudi Arabia
B) United Arab Emirates C) Oman D) Egypt
E) Syria F) Bahrain G) Kuwait
H) Qatar L) Other: _____

Q6-Q9 which of the following images you considers to have the most aesthetic appearance? (Repeated from for each set of photos)

Q10- which element from the face you think it's the most important in assessing facial aesthetic?
A) Eyes B) Nose C) Lips D) Teeth

Q11- which of the following conditions you consider to be important to have facial aesthetics?
A) Proportionality between facial elements.
B) Facial symmetry.
C) Harmonious composition between facial elements.
D) Equality between the three vertical thirds of the face.

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