

A STUDY OF AFFECTING FACTORS OF PERCEIVED AGING IN TWINS

Poster ID
206

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Introduction:

There have been many studies on factors affecting the perceived aging of the face, and it is empirically known that the face with more wrinkles, the darker the skin, the uneven color, and the more sagging, looks the older the face[1-2]. The best research method be a longitudinal study in which the subjects are followed up, but it is very difficult to conduct the study realistically as it takes a lot of time and effort. Therefore, most of these aging studies were cross-sectional studies, and correlation analysis or regression analysis was performed for age and skin characteristics. People infer age recognition from other people's faces based on the relationship between age and skin characteristics [3]. In order to control the face shape that can affect the perception of facial aging, in some studies, the effect of each factor on the same face was studied by computer simulation. However, few studies have been conducted on perceived aging in identical twins. Therefore, in this study, factors affecting perceived aging in identical twins were discovered and their influence was studied.

Materials & Methods:

Show the methodology used to perform the work, it is suggested to use a descriptive diagram. Twenty-four pairs of identical twins aged 24-64 years old (one pair being triplets) were recruited for this study. 48 volunteers, except for one of the triplets, facial images were taken by digital camera (VISIA-CR, Canfield, USA). Two clinical researchers visually evaluated for the wrinkles (forehead, glabella, eyes (crow's feet), eye bag, under the eyes, nasolabial folds, upper lips, corners of the mouth), pores, and skin color (redness, cheek pigmentation, cheekbones pigmentation, darkening of pigmentation, size of pigmentation, dark circles, and troubles) based on Skin Aging Atlas [4] and IGA (Investigator's Global Assessment). Volunteers were divided into a relatively older-looking group and a relatively younger-looking group, and statistical analysis, paired t-test and binomial logistic regression analysis, were performed by SPSS v24 (IBM, USA). Additionally, in order to compare skin visual state of each group, the virtual facial images were generated in which each defect was superimposed on the 5 people in each group by Multi Face™. Multi Face™ which new approach to visualize for volunteers face, was performed by google cloud vision api (Google, USA) and Image pro 10 (Media Cybernetics, USA).

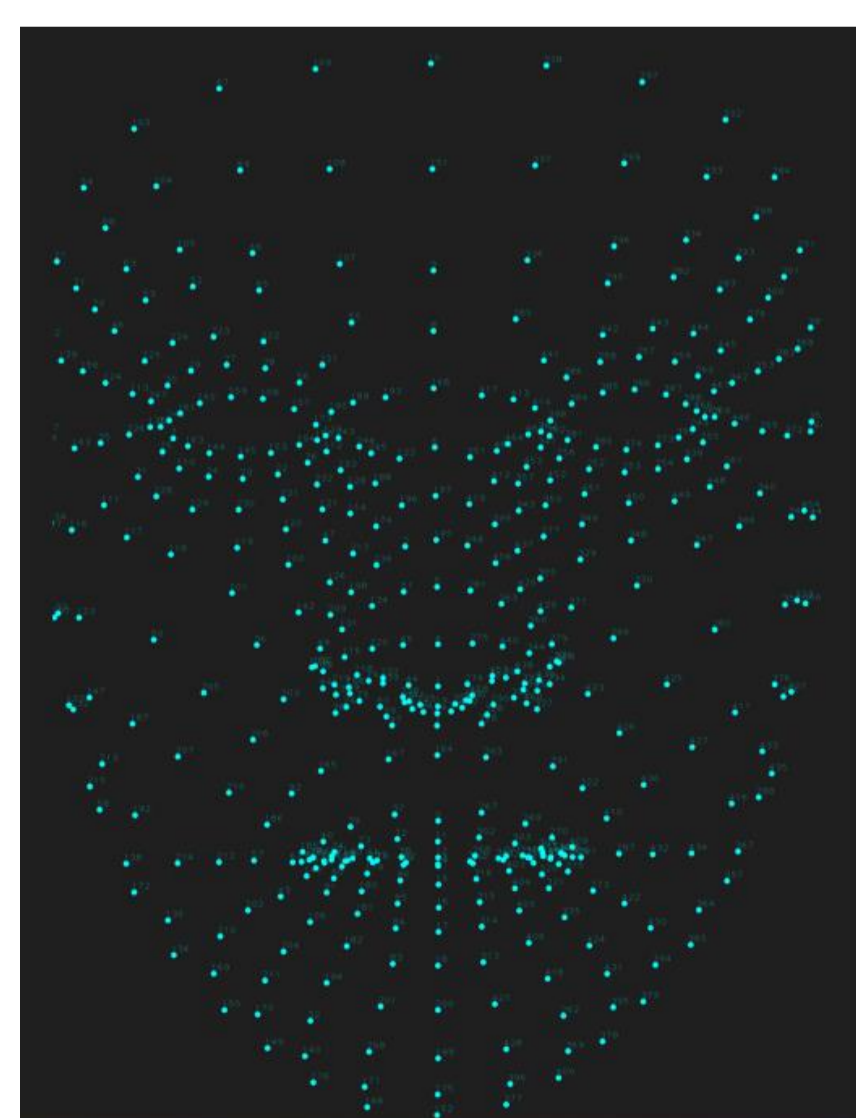


Figure 1. google cloud vision api

Results & Discussion:

The results show at figure 2, 3, and 4. There was a significant difference between the relatively young-looking group and the old-looking group in some morphological indicators. The score of wrinkles of corners of the mouth, and total morphological indicators at older-looking group were significantly higher than younger-looking group's. Forehead and under the eye wrinkles were not significantly different but the p-value was smaller than 0.1. Furthermore, there were also significant difference left cheek pigmentation and total wrinkle and pigmentation index scores between two groups (Figure 3 and 4)

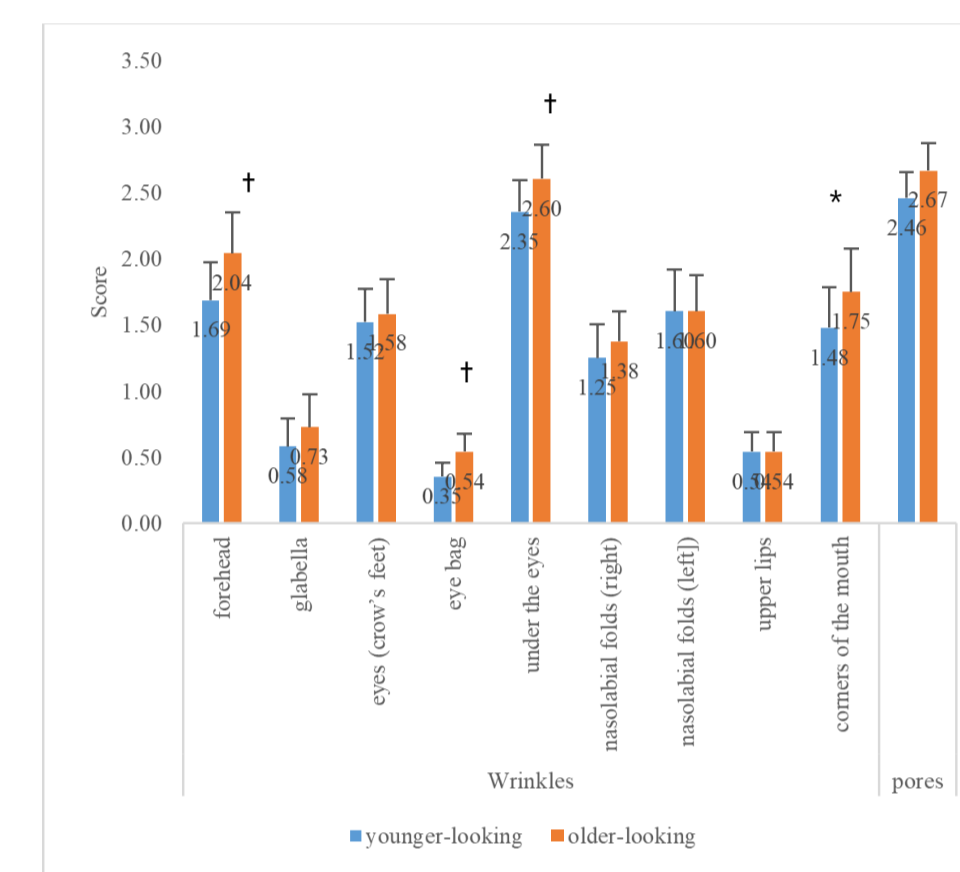


Figure 2. Comparison results of morphological indicators between younger and older-looking groups.

Data expressed Mean +/- SE
†: $p < 0.1$, *: $p < 0.05$

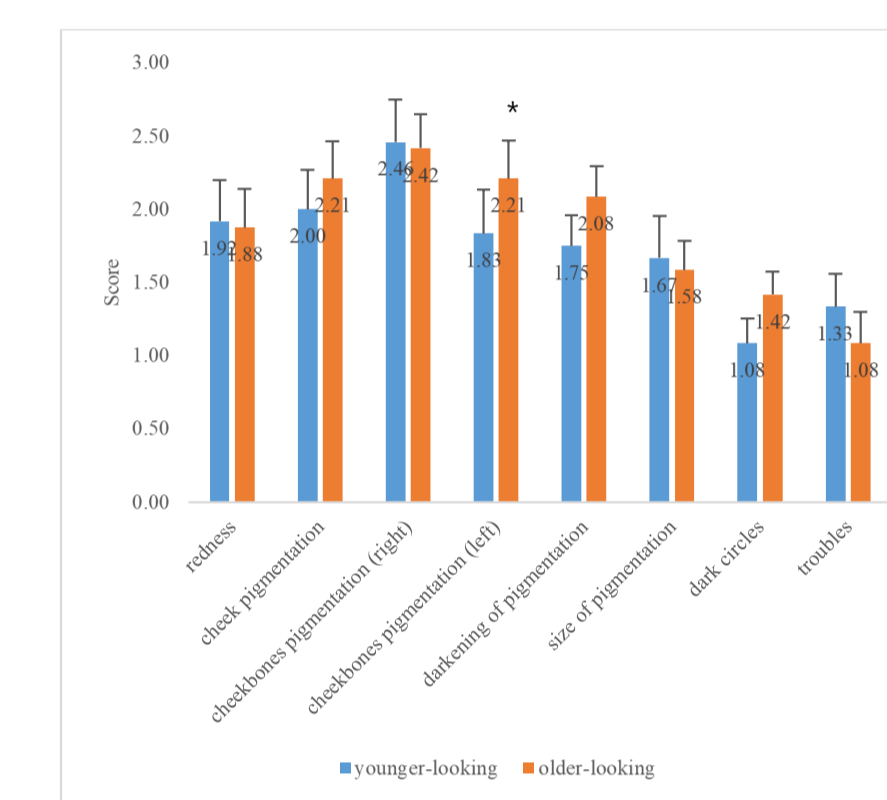


Figure 3. Comparison results of skin color related indicators between younger and older-looking groups.

Data expressed Mean +/- SE
*: $p < 0.05$

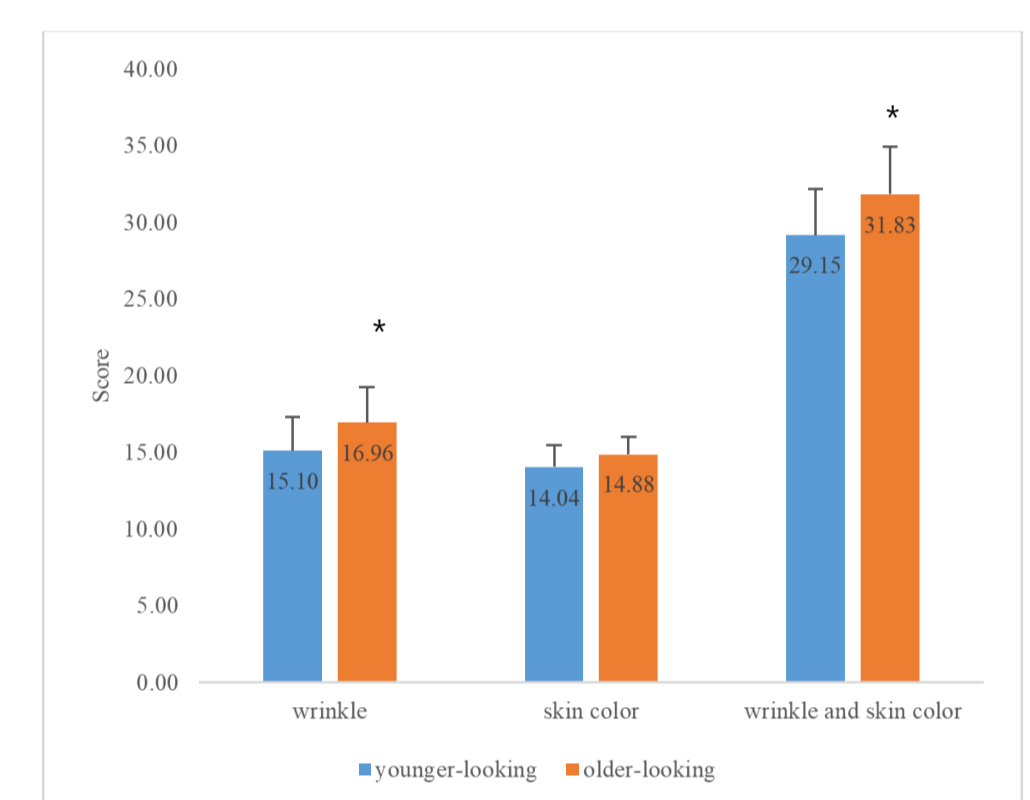


Figure 4. Comparison results of score summation between younger and older-looking groups.

Data expressed Mean +/- SE
*: $p < 0.05$

The further analysis, binomial logistic regression analysis was performed. As a result, dark circles were a significant ($p < 0.05$) influencing factor on perceived aging, and wrinkles, eye bags, and cheek pigmentation were not significant, but were analyzed as potential affecting factors on perceived aging ($p < 0.1$) (Table 1). In addition, the defects superimposed facial image showed at Figure 5.

	B	S.E.	Wald	d.f	p-value	Exp(B)
eyes (crow's feet)	0.789	0.439	3.231	1	0.072	2.201
eye bag	-1.568	0.808	3.765	1	0.052	0.208
cheekbones pigmentation	-0.601	0.313	3.675	1	0.055	0.548
dark circle	-0.886	0.438	4.085	1	0.043	0.412
constant	1.779	0.842	4.463	1	0.035	5.925

Table1. Results of binomial logistic regression analysis
Reference: older-looking
Method: backward stepwise
df: degree of freedom

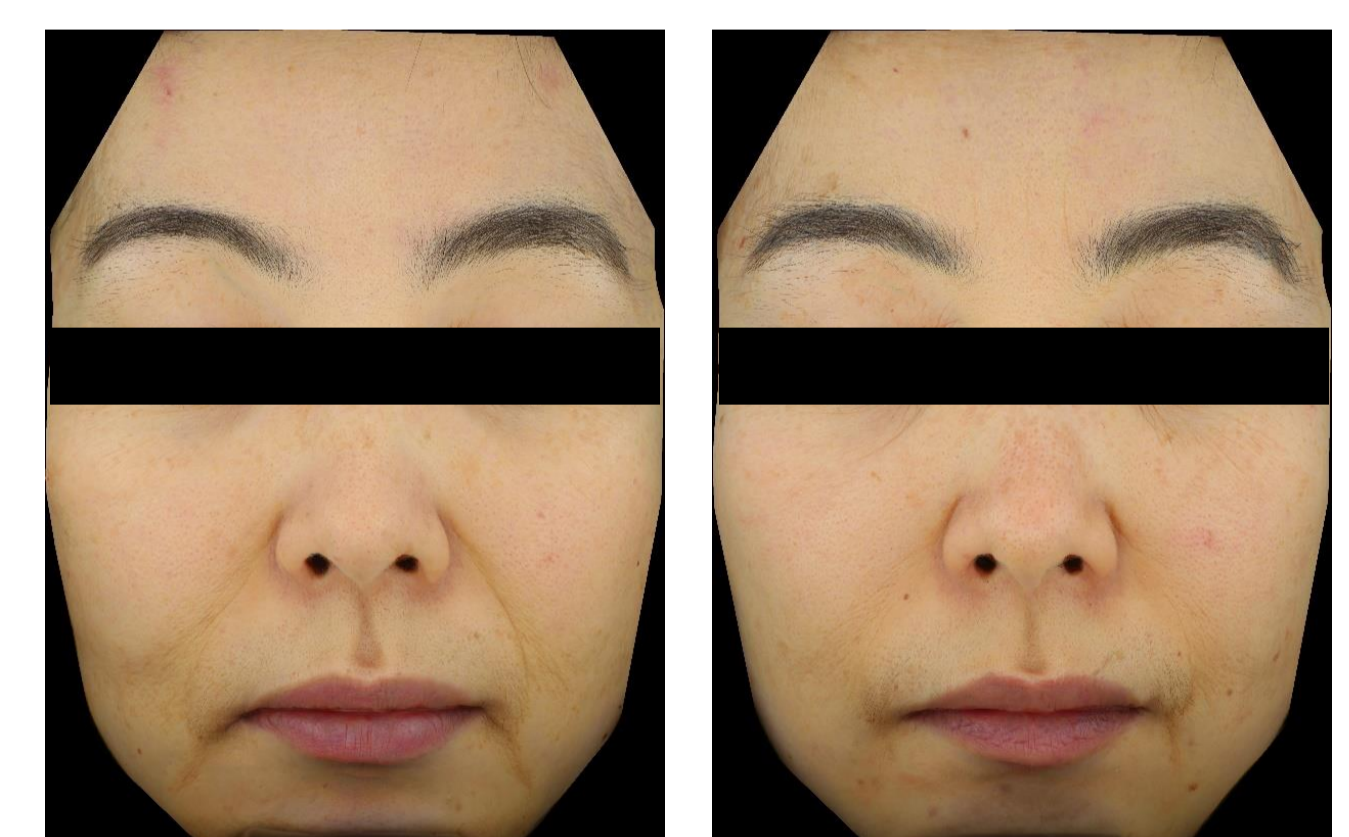


Figure 5. Superimposed facial image of 5 people in each group.

Conclusions:

Visual factors such as wrinkles and skin color are influencing factors of perceived aging, and improvement of these influencing factors will lead to a more youthful-looking face.

Acknowledgements:

This study was supported by AMOREPACIFIC, and thanks to Global Medical Research Center, Korea, for this study.

References:

1. Akazaki, S., et al., Age-related changes in skin wrinkles assessed by a novel three-dimensional morphometric analysis. *Br J Dermatol*, 2002. 147(4): p. 689-95.
2. de Rigal, J., et al., The effect of age on skin color and color heterogeneity in four ethnic groups. *Skin Res Technol*, 2010. 16(2): p. 168-78.
3. Mayes, A., et al., Ageing appearance in China: biophysical profile of facial skin and its relationship to perceived age. *Journal of the European Academy of Dermatology and Venereology*, 2010. 24(3): p. 341-348.
4. Roland BAZIN, F.F., *SKIN AGING ATLAS*. Vol. 2. 2010, PARIS: MED'COM.