A study on application of beauty indices in Japan on Korean women in their twenties to forties

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ABSTRACT

The purpose of this study is to confirm the possibility of the application of beauty indices in Japan on Korean women in their 20's to 40's. The 6th Size Korea data and 'Beautiful Proportions' and 'Golden Canon', the beauty indices of the Human Science Research Center of Wacoal, were used to the analysis. The analysis items include the vertical proportion(bust height, hip height), horizontal proportion(bust girth, underbust girth, waist girth, abdomen girth, hip girth), frontal silhouette(bi-shoulder width, bi-bust point width, hip width) and side silhouette(bust depth, hip depth). The corresponding sample t-test was performed to verify the difference values between the subjects' average body sizes and the beauty indices. The results are as follows: Compared with the subject's body sizes and 'Beautiful Proportion', there were significant differences in all items of vertical proportion and horizontal proportion at all ages excluding the abdomen girth and the hip girth in the 40's. For 'Golden Canon', there were significant differences in all items of frontal silhouette and side silhouette at all ages. Therefore, applying Japanese beauty indices to Korean women of 2010s is inappropriate, which suggests that developing a new beauty index for Korean women is needed.

Keywords: beauty index, body proportion, body silhouette, somatotype, Korean adult women, 6th Size Korea

1. Introduction

Modern people have great value for the exterior that can express themselves and their interest in appearance is increasing day by day. Especially for women, their appearances contribute to their confidence and emotional stability. They try to obtain psychological satisfaction by complementing their physical appearance and expressing their ideal type through clothing(Kim et al., 2014).

Recently, interest in health and fitted body shape is increasing rapidly(Kim & Lee, 2008). As a result, the market for body shaping foundation garments is growing.

Previous researches on women's foundation garments mainly focused on preferences, satisfactions and wearing sensations of the foundation garments(Kim, 2006; Kim & Chung, 2002; Pan et al., 2009). However, researches on designs of foundation garments which are suitable for Korean female body are insufficient and there are few basic data for it.

Age is a very important factor in designing foundation garments. Sizes and shapes of the human body vary according to skeleton, muscle and especially the thickness and position of the subcutaneous fat layer, in each age group(Jung & Lee, 1993). Despite the fact that the body shape changes with age, commercial foundation garments have been produced by proportion and body contour of young adults in their twenties with fewer body changes and ideal silhouettes(Kim, 2006).

Wacoal's Human Science Research Center in Japan developed an indicator of ideal body beauty to incorporate the concept of body beauty into foundation garments. 'Beautiful Proportion (1979)' presented the ideal girth and height for each age group. 'Golden Canon (1995)' presents an ideal ratio of width, thickness, and height to the torso area to represent the ideal female silhouette(Yu et al., 2006).

Beauty index for Korean women have not yet been developed in Korea. In order to see how the shape of a Korean woman is different from her ideal body shape, it is inevitable to use Japanese beauty index. However, according to previous studies, there are difference in body shape and body satisfaction by culture, and ideal beauty standards can also vary depending on cultural environment(Nam & Lee, 2001; Park, 2000; Park et al., 2004). In addition, the silhouette of the human body, which is ideally considered by the present era, changes with the passage of time due to the influence of social and cultural backgrounds(Shin, 2006).

Thus, examining whether beauty indices based on Japanese women in the 1980s and 1990s can be applied to Korean women in the 2010s is necessary. According to Wass et al.(1997), WHR(Waist-hip ratio) plays an important role in determining the female body shape and attractiveness, and healthy women before menopause generally have WHR values between 0.67 and 0.80.

Therefore, this study aims to confirm whether the Japanese beauty indices can be applied to modern Korean women by comparing the body size of Korean women in their twenties to forties with normal range WHR values and the Japanese beauty indices.

2. Method

2.1 Data Collection & Analysis

3D shape measurement data of the 6th Size Korea project(2010) were used as the anthropometric data of Korean women in their 20's to 40's. The women with WHR value of 0.67 to 0.80 were selected for the analysis(20's: n=187, 30's: n=139, 40's: n=39). Wacoal's 'Beautiful Proportion' and 'Golden Canon' were selected as the beauty index. 'Beautiful Proportion' was used to confirm vertical proportion(bust height, hip height) and horizontal proportion(bust girth, underbust girth, waist girth, abdomen girth, hip girth). 'Golden Canon' was used to confirm frontal silhouette(bi-shoulder width, bi-bust point width, hip width) and side silhouette(bust depth, hip depth). A corresponding sample t-test was performed to compare the subject's body size and beauty indices for each age group.

3. Results

3.1 Comparison of subjects' body sizes and beauty indices

Compared with the subject's body sizes and 'Beautiful Proportion', there were significant differences in all items of vertical proportion at all ages. The subjects' dimensions were lower than the index at all height items. In particular, the difference was greater at the hip height than at the bust height. In the case of horizontal proportion, there were significant differences in all items in the 20's and 30's. In the 40's, there were significant differences in the bust girth, the underbust girth and the waist girth excluding the abdomen girth and the hip girth. Especially, the difference in the waist girth was the largest at all ages.

Compared with the subjects' body sizes and 'Golden Canon', there were significant differences in all items of frontal silhouette at all ages. The subjects' width dimension was smaller than the index. This indicates that the body flexion of the subject observed from the front is gentler than that of the body flexion based on the index. There were also significant differences in all items of side silhouette at all ages. In all depth items, the subjects' dimensions were smaller than the index. This indicates that the body flexion of the subject observed on the side is gentler than the body flexure suggested by the index.

4. Conclusion

'Beautiful proportion' and 'Golden Canon' were compared with the body sizes of the Korean women in their 20's to 40's, which indicates that there is a limit to applying Japanese beauty indices to Korean women of 2010s. Therefore, it is necessary to develop a new beauty index for Korean women

as basic data for the development of foundation clothing suitable for modern Korean female body shape.

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References

- Jung, M. S., & Lee, S. W. (1993). A study on somatotype and body shape variation of female in the twenties. *Journal of Korean Society of Clothing and Textiles*, 17(1), 119-128.
- Kim, H. K., & Chung, M. S. (2002). A study on wearing practice and purchasing behavior of functional foundation of adult women's according to body cathexis. *Journal of Human Ecology*, 12, 28-39.
- Kim, J. A., & Lee, J. R. (2008). A study on the somatotype of women in their twenties by degree of obesity and classification of silhouette. *The Korean Journal of Community Living Science*, 19(3), 419-429.
- Kim, S. H., Shim, S. Y., Jho, A. R., Choi, J. W., & Kweon, S. A. (2014). The wearing behaviors and wearing satisfaction of the foundation which female college students wear. *Journal of Human Ecology*, 18(1), 117-130.
- Kim, Y. S. (2006). A study on the actual wearing condition of foundation garment for adult women: Focusing on the brassiere and girdle. *Journal of Fashion Business*, 10(1), 132-147.
- Nam, Y. J. & Lee, S. H. (2001). Comparison of perceived body size and actual body size between Korean and American college women. *Journal of the Korean Society of Clothing and Textiles*, 25(4), 736-747.
- Pan, H. Y., Choi, J. M., Kweon, S. A., & Sohn, B. H. (2009). A Study on the Wearing and Preferences of Brassiere for Female College Students. *Korean Journal of Human Ecology*, 18(5), 1093-1101.
- Park, J. K., Nam, Y. J. & Choi, K. M. (2004). A comparison of satisfaction for actual body between Korean and Japanese female college students. *Journal of the Korean Society of Clothing and Textiles*, 28(6), 758-766.
- Park, W. M. (2000). Comparative study on the satisfaction with and perception about their bodies by Korean and American female students. *Journal of the Korean Society of Clothing and Textiles*, 24(5), 736-747.
- Shin, S. O. (2006). A history of costume in the west. Seoul: Soohaksa.
- Wass, P., Waldenstrom, U., Rossner, S., & Hellberg, D. (1997). An android body fat distribution in females impairs the pregnancy rate of in-vitro fertilization-embryo transfer. *Human Reproduction*, 12, 2057-2060.
- Yu, W., Fan, J., Harlock, S. C., & Ng, S. P. (2006). Innovation and technology of women's intimate apparel. Cambridge: Woodhead Publishing.