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Original Article

What body shape do I prefer for myself and for other people? Gender differences in preferences for an ideal female body shape

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Abstract
Body shape dissatisfaction may lead to eating disorders or obesity, and factors such as personal and perceived others' ideals are important influences on this. While men and women could have different preferences on ideal body shape of a particular gender, societal norms within unique ethnic and social communities also influence the social perceptions of what same- and opposite-gender peers consider as the cultural ideal shape. The purposes of this study were to 1) compare the preferences for most physically attractive female body shape among Hong Kong university males and females with three different weight categories (underweight: <18.5 kg/m^2, normal weight: 18.5 – 22.9 kg/m^2 and overweight: ≥23 kg/m^2); and 2) compare the preferences for most physically attractive female body shape, body appreciation, self-esteem and body shape satisfaction level among Hong Kong university females with three different weight categories.1051 Chinese women and 864 men studied in a Hong Kong university (aged 17 - 35 years; BMI = 13.8 - 42.3 kg/m^2) participated in the study. They completed a self-administered questionnaire containing the Photographic Figure Rating Scale, the Rosenberg's self-esteem scale, and the Body Appreciation Scale. Results show that the gender differences in body shape ideals exist. Males have the same preferences for the attractiveness of female body shape. Females underestimate the size of men's preferred female body shape. The situation is the worst for underweight women. Among the three women's weight categories, the body appreciate score and body shape satisfaction were the highest in underweight women, while no self-esteem differences were observed. The misperception of body mass index and current body shape exists among the females. Public health education aiming to raise awareness on the importance of proper weight perception is urged.
Key words: **Adults, Asians, Body shape perception, Physical attractiveness**

Introduction

Body shape dissatisfaction results from 1) distorted body size estimation - perceiving the body larger than it really is, 2) discrepancy between the self-perceived and the ideal body size, 3) negative feelings and cognitions towards the body – perceived parts of the body being too big (Ogden, 2010), and 4) the perception of the way one thinks others seeing him/hers (Fallon, 1990). Personal and perceived others' ideals are important influences on body dissatisfaction. Women are concerned primarily with the thin ideal, whereas men are focused more on a muscular ideal (Ahmadi, Heirani & Yoosefy, 2018; Austin, Haines, & Veugelers, 2009; McCreary & Saucier, 2009). Body image disturbances are more common in women than in men, and women are less satisfied with their bodies than men (Cheung et al., 2011; Fiske, Fallon, Blissmer, & Redding, 2014; Swami et al., 2010). Body image concerns are prevalent on Western societies. However, among Asian countries, the emergence of expanded changes such as rapid economic, sociocultural changes, generation conflict, disintegration of extended family network, urbanization and population density may partly explain why eating disorder is no longer a culture-bound syndrome (Makino, Tsuboi, & Dennerstein, 2004).

Societal norms within unique ethnic and social communities influence the social perceptions of what same- and opposite-gender peers consider as the cultural ideal shape (McCabe & Ricciardelli, 2001; Stice, 2002). For instance, research shows that women overestimate men's preferences for thinness (Gardner, Jaap, & Gardner, 2009; Wong & Say, 2013).

In Asia, a preference of smaller body shape than a healthy body shape has been reported in female adolescents and college women from Vietnam, Malaysia, Taiwan, Japan and China (Sano et al., 2008; Shih & Kubo, 2002; Wong & Say, 2013). Ng (2014) examined 588 university students from 4 universities in Hong Kong and found that in both male and female participants, the sizes they chose to represent the 'healthiest' figure for both genders are significantly larger than the sizes they chose to represent the 'ideal' figure. The differences in ideal body shape perception exist across genders and populations with their unique socio-culture.

In addition to the cultural influence and gender difference, body mass index (BMI) has been found to be inversely associated with body shape satisfaction in male and female university students (Markey & Markey,

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2005; Senekal & Kunneke, 2006). Streeter, Milhausen and Buchholz (2012) classified young adults (75 males and 87 females) into different weight groups (healthy weight, overweight, and obese) and found that BMI and percentage of fat mass were highly correlated (r for males = 0.74, r for females = 0.82; both $p < 0.001$), and inversely associated with body image. Underweight people do not always report a low body image concern. They may endorse lower scores on the positive body image as well. However, most studies as for weight categorized are related to poor body image and the positive aspects of body image are under represented in the literature, especially for the underweight individuals. Therefore, other factors such as the individual's BMI, positive body image and self-esteem should take into consideration when studying the body shape satisfaction.

This study had two hypotheses: 1) university females would underestimate the body size that would be most attractive to men and the degree of underestimation for thinness increases with their increasing BMI, and 2) the positive body image, self-esteem and body shape satisfaction level of university females decrease with their increasing BMI.

The purposes of this study were to 1) compare the preferences for most physically attractive female body shape among Hong Kong university males and females with different weight categories; and 2) compare the preferences for most physically attractive female body shape, body appreciation, self-esteem and body shape satisfaction level among Hong Kong university females with different weight categories.

Methods

Participants

1051 Chinese university women (mean age = 20.0 ± 3.9 years old, ranged: 17 - 35 years; mean BMI = 20.0 ± 2.6 kg/m^2, ranged: 13.8 - 40.6 kg/m^2) and 864 Chinese university men (mean age = 20.6 ± 4.8 years old, ranged: 17 - 39 years; mean BMI = 21.2 ± 3.2 kg/m^2, ranged: 16.0 - 42.3 kg/m^2) in Hong Kong participated in the study. BMI calculated as weight (in kg) divided by height squared (m^2) was used to define weight status of the participants. The vast majority of respondents were single (female respondents: 95.9%; male respondents: 94.5%) and were studying undergraduate (female respondents: 94.7%; male respondents: 87.5%).

Procedure

Weight discrepancy

Participants completed the Photographic Figure Rating Scale (PFRS; Swami et al., 2008; Chinese translation: Ng, Barron, & Swami, 2015). PFRS is a figural rating scale that depicts 10 front-view, photographic images of women, ranging in body size from emaciated (1 = *Figure with the lowest BMI*) to obese (10 = *Figure with the highest BMI*). All images were presented in greyscale, with faces obscured, and in standard clothing.

They were asked to rate the figure that 1) is most closely matching their own body (current), 2) they would most like to possess (ideal), 3) is most physically attractive, 4) they think men of their age and cultural background find most physically attractive, and 5) represents the body that is typical for women of their age and cultural background on a 10-point scale, ranging from 1 (*Figure with the smallest body size*) to 10 (*Figure with the largest body size*).

Actual-ideal weight discrepancy was calculated as the difference between absolute current and ideal ratings, so that higher scores reflected greater weight discrepancy.

Body satisfaction was examined through the differences between the current body shape and ideal body shape chosen by each female respondent. A zero score indicated satisfaction with current body shape; negative scores indicated the desire to become thinner; and positive scores indicated the desire to become heavier. The internal consistency for the different subscales or dimensions as estimated by Cronbach's α ranged from 0.68 - 0.85.

Rosenberg's self-esteem scale (RSES)

The RSES (Rosenberg, 1965) is widely used to assess global self-esteem, which is related to self-acceptance and self-assessment (Tafarodi & Milne, 2002). The scale comprises 10 items rated on a 4-point Likert ranging from 1 (*Strongly disagree*) to 4 (*Strongly agree*). The scale has demonstrated appropriate validity and reliability in the literature (Sinclair et al., 2010). A Chinese version of the RSES (Kwan, Bond, & Singelis, 1997) with one item removed was adopted in the study (Tian, 2006). Higher scores indicated higher self-esteem. Internal consistency of the total score was 0.87 in this sample. The internal consistency for the 9-item as estimated by Cronbach's α ranged from 0.613 to 0.703 for men and from 0.644 to 0.771 for women respectively.

Body Appreciation Scale (BAS)

One of the most widely used positive body image measurements is the 13-item body appreciation scale (BAS; Avalos, Tylka, & Wood-Barcalow, 2005). The assessment of positive body image in Chinese population is validated by BAS (Ng, Barron, & Swami, 2015). The BAS consists of 13 items rated from 1 (*Never*) to 5 (*Always*). Scores on these items were averaged, with higher scores representing a more positive body image. The internal consistency Cronbach's α ranged from 0.793 to 0.840 for men and from 0.839 to 0.882 for women respectively.

Statistical Analysis

We used the SPSS version (24.0) for all the statistical analyses. A series of analysis of variance (ANOVA) was performed to investigate any significant differences among male and female respondents with the three BMI categories according to World Health Organization (WHO, 2000)'s adult BMI standard for Asians

underweight (UW: <18.5), normal weight (NW: 18.5 - 22.9) and overweight (OW: ≥23.0) on 1) most physically attractive, 2) they think men of their age find most physically attractive, and 3) represent the body that is typical for women of their age. Independent sample t-tests were employed to assess any significant perception differences between genders on 1) most physically attractive, 2) they think men of their age find most physically attractive, and 3) represent the body that is typical for women of their age. Thus, when MANOVA revealed significant differences between groups, Scheffe post hoc tests were performed to delineate which groups were different. Scheffe post hoc tests were performed to test any significant differences among weight categorizes across genders, respectively on 1) most physically attractive, 2) they think men of their age find most physically attractive, 3) represent the body that is typical for women of their age, 4) BAS, and 5) self-esteem. An alpha level of 0.05 was employed for all statistical tests.

Results

Among females, the BMI significantly correlated with their absolute value of weight discrepancy (All: r = 0.440, $p < 0.01$; UW: r = -0.044, $p > 0.01$; NW: r = 0.326, $p < 0.01$; OW: r = 0.009, $p > 0.01$), their BAS (All: r = -0.320, $p < 0.01$; UW: r = -0.070, $p > 0.01$; NW: r = -0.269, $p < 0.01$; OW: r = -0.039, $p > 0.01$), but not significantly correlated with their self-esteem (All: r = -0.056, $p > 0.01$; UW: r = 0.060, $p > 0.01$; NW: r = 0.023, $p > 0.01$; OW: r = .039, $p > 0.01$). All women chose between no. 2 and no. 4 out of 10 figures as their "ideal", "most physically attractive" and "men of their age find most physically attractive".

Compared to UW females, NW and OW females expressed greater weight discrepancy, and desired a body shape approximately two to three figures smaller than their current shape. UW women showed the highest body appreciation scores, followed by NW and OW women (see Table 1).

Table 1: The body shape perception and weight discrepancy among the female respondents with the three BMI categories (mean ± SD).

	Women			Men		
BMI categories	<18.5 underweight (n=294)	18.5-22.9 normal weight (n=668)	≥23.0 overweight (n=89)	<18.5 underweight (n=131)	18.5-22.9 normal weight (n=543)	≥23.0 overweight (n=190)
Mean BMI (kg/m^2)	17.5±0.9	20.3±1.2	25.6±3.5	17.3±1.0	20.6±1.2	25.5±3.4
Mean age (years)	19.7±3.6	19.9±3.7	21.8±5.9	19.0±1.7	20.1±3.9	23.1±7.1
Most physically attractive figure#	3.11±1.06	3.08±0.93	3.43±0.95*	3.69±1.21	3.55±1.00	3.59±1.36
Men of my age find most physically attractive figure#	3.28±1.18	3.15±1.19	3.15±1.09	3.65±1.34	3.48±1.07	3.51±1.33
My current figure#	2.92±1.00	4.15±1.19	6.12±1.47*	/	/	/
My ideal figure#	2.88±0.88	2.96±0.95	3.60±1.22*	/	/	/
Typical figure for women of my age#	3.44±1.10	3.33±1.16	3.75±1.38*	3.82±1.47	3.70±1.50	3.74±1.43
Weight discrepancy = absolute value 'current' minus 'ideal'	0.93±0.7	1.35±0.92	2.76±1.47*	/	/	/
No weight discrepancy	25.3%	12.3%	3.4%	/	/	/
Wanted to be larger	35.2%	6.3%	2.3%	/	/	/
Wanted to be thinner	39.5%	81.4%	94.3%	/	/	/
Body Appreciation Scale	45.5±0.4	42.9±0.3	38.0±0.8*	41.8.1±0.6	43.2±0.3	41.3±0.5
Self-esteem	25.8±2.0	25.7±2.2	25.0±2.0	25.6±2.2	25.7±2.2	25.7±2.3

* $P < 0.01$ using ANOVA test

1 is figure with the smallest body size; 10 is figure with the largest body size

The vast majority of OW (94.3%) women showed their desires to be thinner. Over four-fifths (81.4%) of the NW females desired to be thinner which would shift them into the UW BMI classification. Among the UW females, about two-thirds (64.8%) did not desire a bigger body shape. About a quarter (25.3%) and two-fifths (39.5%) of UW females reported that they wanted to maintain their underweight status and desired an even slimmer body shape respectively.

There was a statistically significant interaction effect between gender and the three BMI categories on the combined dependent variables, $F(10, 3210) = 6.222$, $p < 0.01$; Wilks' Lambda = .962, partial $\eta^2 = 0.019$. Univariate ANOVAs revealed a significant main effect in gender ($F(5, 1605) = 6.688$, $p < 0.01$; Wilks' Lambda = .980, partial $\eta^2 = .020$), and three BMI categories ($F(10, 3210) = 8.151$, $p < 0.01$; Wilks' Lambda = .951, partial $\eta^2 = .025$).

Results of independent sample t-test showed that male respondents (n = 864) reported significantly bigger female body figure than their female counterparts (n = 1051) in 1) most physically attractive (3.6±1.1 vs 3.1±1.0; $t(1913) = 9.57$, $p < 0.01$), 2) they think men of their age find most physically attractive (3.5±1.2 vs 3.2±1.2; $t(1842.54) = 6.06$, $p < 0.01$), and 3) represent the body that is typical for women of their age (3.7±1.5 vs 3.4±1.2; $t(1912) = 5.37$, $p < 0.01$). Male respondents expressed lower value of BAS (42.6±6.3 vs 43.2±6.8;

t(1614) = -2.04, $p < 0.05$), whereas no significant differences were observed between gender on their self-esteem (25.7±2.2 vs 25.7±2.1; t(1797.36) = -.11, $p > 0.05$).

Results of ANOVA showed that there was no significant difference among male respondents in the three different weight categories in 1) most physically attractive ($F(2, 861) = 0.937$, $p > 0.01$), 2) they think men of their age find most physically attractive ($F(2, 861) = 1.055$, $p > 0.01$), and 3) represent the body that is typical for women of their age ($F(2, 861) = 0.282$, $p > 0.01$).

OW female respondents reported their perceived "attractive" figures ($F(2, 1048) = 5.132$, $p < 0.01$) and their "ideal" ($F(2, 1064) = 14.70$, $p < 0.01$) significantly bigger size than their UW and NW counterparts. There was no significant difference in the perception of figure that "men of their age find most physically attractive" among females with three different weight categories ($F(2, 1048) = 1.305$, $p > 0.01$). OW females rated larger figure as "typical for women of their age" than their NW counterparts ($F(2,1048) = 5.302$, $p < 0.01$).

Discussion

The current study examined the preferences for most physically attractive female body shape among Hong Kong university males and females with different weight categories. Our first hypothesis, that university females would underestimate the body size that would be most attractive to men and the degree of underestimation for thinness increases with their increasing BMI, was partially supported.

Irrespective of weight status, women respondents underestimated the female body shape of what men found attractive in the present study; they perceived that men desire thinner female body shapes. Similar observation was noted that college women underestimated the size of men's preferred female body shape in Spanish and American (Carlson & McAndrew, 2004). Females with different weight categories reported different perceptions of female physical attractiveness. OW women's ideals for their own bodies were closely aligned with what men wanted in female bodies.

Body shape and BMI are two important cues to perceive female physical attractiveness in both men and women (Tovée & Cornelissen, 2001). Results showed that there was a gender difference in the perception of female body attractiveness. Males preferred bigger size than their female counterparts. There was no significant difference in the perception of female body attractiveness among males with different weight categories. It was in contrast with the mate selection theory which postulates that an individual will be able to judge not only the attractiveness of members of the opposite sex, but also that he or she will know their own attractiveness relative to other members of the same sex (Buss, 1992). According to this theory, there should be no gender difference in the perception of either female and male attractiveness, as both sexes should use the same selection criteria for estimating attractiveness in a particular gender (Tovée & Cornelissen, 2001). Our second hypothesis, that university females expressed lesser positive body image, self-esteem and body shape satisfaction level with increasing BMI, was supported except for their self-esteem. Generally, our results supported previous work which suggested that body weight and shape dissatisfaction is present in females and increases with increasing body size (Yates et al., 2004). Consistent with our hypotheses, females in our sample expressed greater body shape dissatisfaction with increasing BMI.

Of all university females with similar level of self-esteem in the present study, 15.2% were satisfied, 14.1% perceived self as too thin (desired to gain weight), while 70.7% perceived self as too heavy (desired to lose weight). These findings were in line with previous findings in Hong Kong that large proportion of female college students (67.7%) were dissatisfied with their body weight and chose an ideal body weight lower than actual weight (Ng, 2014). Similar findings related to weight dissatisfaction of college females were reported in studies conducted in Pakistan (45.6%; Khan, Khalid, Khan & Jabeen, 2011), Brazil (47.3%; Costa Lda & de Vasconcelos, 2010), Taiwan (65.5%; Shih & Kubo, 2002) and Poland (65.6%; Jaworowska & Bazylak, 2009).

The high rates of body dissatisfaction among university females found in this study suggested the need to understand how body dissatisfaction begins in young adult populations. Moreover, which factors are associated with dissatisfaction needs to be explore in order to develop strategies that encourage the adoption of healthy lifestyles and promote a better quality of life at all stages of life.

Positive body image is manifested by realistic perception and acceptance toward person's size and shape (Avalos, Tylka, & Wood-Barcalow, 2005). In line with the previous findings with college women from Hong Kong and China, the positive body image measured by body appreciation scores was associated with their actual-ideal weight discrepancy and BMI (Swami & Ng, 2015; Swami, Ng, & Barron, 2016). Ng and Lin (2020) investigated the effect of a 13-week skill oriented compulsory physical education course participation on Body Appreciation Scale-2, and found that compulsory physical education participation significantly improved their positive body image. Besides, in view of their ignorance to achieve the desired body image and body shape concern may raise fear of unhealthy eating practices among females. Thus, health awareness programs, health promotion, and health screening are to be necessitated among female university students to alleviate the potential risk of unhealthy eating behaviors.

Compared to UW females, NW and OW females expressed significantly greater body shape dissatisfaction. A linear relationship was found between current weight status and ideal body shape. This finding was in line with the study of Alipoor and his colleagues (2009) that there is a significant correlation between dissatisfaction level and actual BMI of female students (r =.95, P < 0.01). Different observations were found in

other countries, for instance, White women experienced body dissatisfaction at a lower BMI, but Black and Hispanic women did not report body dissatisfaction until they were overweight as assessed by their BMI (Fitzgibbon, Blackman, & Avellone, 2000).

We found that the distribution of ideal body shape for women in the present study generally shifted towards slimmer body shape, compared with the curve of perceived current body shape. This means that women generally perceived their current body shape bigger than what they desire. This was in agreement with the explanation of Grabe and Hyde (2006) and Evans and McConnell (2003) that White and Asian women responded similarly to mainstream Western thin beauty ideals.

Among the three BMI categories, most females in our sample who were NW (81.4%) and UW (39.5%) desired to weigh less. NW women who had achieved healthy body mass were not necessarily more satisfied with their body shapes than those who were UW, while UW women were more satisfied with their body weight. This was in agreement with the finding of Cheung et al. (2011) that women with NW did not have higher intention than UW and OW women to maintain their current body shapes, whereas UW women were less likely to desire for a slimmer body than women in other weight status categories (25.3%). These findings are corroborated by an analysis of National Health and Nutrition Examination Survey (NHANES) data which found that the majority of UW females, closer in body size to the thin cultural ideal, consider their body weight "about right" (Chang & Christakis, 2003). It is possible that females who have attained the sociocultural ideal body size do not desire to change due to the perception of being at the right weight and may receive positive reinforcement from society as a result of their shape (Brownell, Schwartz, Puhl, & Rudd, 2005). This is in line with the findings of Ng (2014) that the ideal of beauty and attractiveness in Hong Kong society is changed which was defined in a beauty pageant. There was a significant time dependent decline in BMI of Miss Hong Kong winners from 18.0 ± 0.7 kg/m^2 in 1970s to 16.9 ± 1.2 kg/m^2 in 2010s without an upward trend in stature.

The occurrence of body shape dissatisfaction may either be affected by perceptual component which causes a person to overestimate their body parts or misperception in actual and ideal body image that lead to extreme concern on one's image and influence obesity development (Schneider, et al., 2012). It is common among females regardless of their BMI status, potentially in response to the strongly portrayed sociocultural thin ideal body, which was in line with the findings that female college students tend to overestimate their body weight (Jaworowska & Bazylak, 2009; Park et al., 2019; Shih & Kubo, 2002).

This misperception of BMI and current body shape could affect weight control behavior and further studies on this are warranted. To avoid such public health crisis arising from current and ideal body shape misconception, public health education aiming to raise awareness on the importance of proper weight perception is urged.

This investigation had several limitations. We could not directly account for the effect of body composition on body shape perception by assessing their body weight status as BMI via self-reported height and weight. It could also misclassify physically fit individuals with dense muscle mass as overweight. Additionally, body image is a multidimensional construct but this study examined only body weight, positive body image, self-esteem and body shape satisfaction. It was unclear whether many slim women felt dissatisfied because of perceived inadequacies in their figures or of other factors. For instance, the issue of breast size dissatisfaction is another concern over the world and it is associated with weight and appearance dissatisfaction (Swami et al., 2020). The present instrument used the pictorial scales was an area needed for further exploration.

Conclusions

The preferences of most physically attractive female body shape could be affected by genders and a person's body weight status, i.e. underweight, normal weight or overweight. This study showed that there was gender differences in perceiving ideal body shape in university students. Men respondents had the same preferences for the attractiveness of female body shape. Women respondents tended to underestimate the size of men's preferred female body shape. The situation was the worst for UW women. Among the three weight categories, UW women had the highest body appreciation and body shape satisfaction scores. The high rates of body dissatisfaction among university females found in this study warrants further investigation on how body dissatisfaction begins in young adult populations. The findings will be useful for the Government and other public health stakeholders to develop approaches such as education programs aiming to raise the awareness on the importance of proper weight perception. This will curb the prevalence of eating disorders including the obesity rate in Hong Kong arising from current and ideal body shape misconception. More studies on the validity and reliability of the pictorial scales in assessing body shape satisfaction in Asian populations are urged.

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