

Original Article

Body shape dissatisfaction and obesity among Taiwanese adolescents

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Purpose: The purpose of this study was to estimate the level of body shape dissatisfaction among a large sample of adolescent boys and girls within different weight categories. **Methods:** A total sample of 883 adolescents aged 12 to 16 was included from junior high schools in Taipei County, Taiwan. The Contour Drawing Rating Scale was used to assess body shape dissatisfaction. **Results:** Body shape dissatisfaction is prevalent in Taiwanese adolescents, particularly for girls. This is linked to degree of overweight in both boys and girls but is also prevalent in girls who are not overweight or obese. Girls and boys clearly aspire to thinness but some boys would also prefer to be larger. **Conclusions:** This study extends our understanding of body shape dissatisfaction and its relationship with weight status in eastern cultures such as Taiwan.

Key Words: body image, body dissatisfaction, obesity, adolescent, Taiwan

INTRODUCTION

Researchers have pointed out that body image concerns are more pronounced during adolescence, with many reporting body shape dissatisfaction and fear of fatness.¹ The percentage of adolescent girls who would like to be thinner are estimated to be between 50% and 80%.² The desire for thinness exists in the context of an increasing obesity prevalence^{3,4} and a link has been established between obesity, body shape dissatisfaction, and mental health problems and unhealthy behaviors.^{5,6} The majority of research has been produced with samples of white Caucasian populations. Levels of body shape dissatisfaction might differ by ethnicity since socio-cultural factors play an important role in the development and prevalence of body shape dissatisfaction.⁷ In particular, there has been very limited research with Asian populations. The purpose of this study was to estimate the level of body shape dissatisfaction among a large sample of adolescent boys and girls within different weight categories in Taiwan.

MATERIALS AND METHODS

Participants

Students were recruited as participants for this study from junior high schools in Taipei County, Taiwan. In order to recruit a representative sample from Taipei County, participants were selected by multiple-stage sampling in the order of urbanisation, school, and class. Four representative urban schools and one representative rural school were randomly selected to reflect the population distribution in Taipei County. Two classes in each grade (grade 7 to 9) in each school were then randomly selected. A total

sample of 883 adolescents aged 12 to 16 resulted (452 boys and 431 girls). Study procedures were approved by the Department of Exercise, Nutrition and Health Sciences Research Ethics Committee, University of Bristol.

Measures

Body mass index (BMI) was calculated using self-reported weight and height and classified using the international definitions⁸ into underweight/normal weight and overweight/obese groups. Age was categorised into young adolescent (age 12-14) and older adolescent (age 15-16). The Contour Drawing Rating Scale which consists of nine male and female figures graded by degree of fatness was administered.⁹ It requires participants to locate their current and ideal body figure. The difference between the ratings is calculated as 'Self-Ideal Discrepancy', and has been considered to be an indication of body shape dissatisfaction. A pilot study with 23 Taiwanese adolescents indicated that the figures were perceived to be reflective of Western bodies. The images were modified slightly and given black hair and on re-administration, all participants agreed the figures were appropriately Taiwanese.

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Table 1. Differences in Self-Ideal discrepancy by gender, weight status, and age group

Measure	Gender		Boys		Girls	
	Boys	Girls	Normal/ underweight	Overweight/ obese	Normal/ underweight	Overweight/ obese
Self-Ideal discrepancy						
Want to be thinner [†]	49.7%	73.7%	26.9%	92.8%	68.2%	100%
Satisfied [‡]	17.7%	16.3%	23.8%	6.5%	19.7%	0%
Want to be bigger [§]	32.6%	10.1%	49.3%	0.7%	12.1%	0%

[†]: Self rating > Ideal rating; [‡]: Self rating = Ideal rating; [§]: Self rating < Ideal rating;

Table 2. Results of ANOVA in body dissatisfaction by gender, weight status and age group

	N	Body dissatisfaction [†]	
		Mean (SD)	F (sig)
Gender			62.0***
	Boys	443	1.4 (1.24)
	Girls	423	1.6 (0.98)
Weight status			144***
	Overweight/obese	221	2.2 (1.14)
	Normal/underweight	645	1.2 (1.01)
Age group			17.5***
	Age 12-14	688	1.4 (1.07)
	Age 15-16	178	1.7 (1.29)
Gender × Weight status			26.4***
Gender × age group			9.88**
Weight status × age group			5.05*
Gender × Weight status × age group			1.75

[†]Absolute value of self and ideal ratings

* $p < .05$; ** $p < .01$; *** $p < .001$

Then, forty-three students aged 12 to 13 in one class (grade 7) were recruited to take part in the test-retest survey over a two-week period, of which 33 participants completed at both time points. The results revealed good test-retest reliability (intraclass correlation: 0.75 in boys and 0.91 in girls). The validity of the figures was assessed by examining the correspondence between an individual's BMI and current self-rating. This study showed a strong association between the current figure and BMI (Pearson correlation: 0.79 in boys and 0.76 in girls, respectively).

RESULTS

Prevalence of obesity

A total of 25.2% of boys and 13.2% of girls were overweight and 9.5% of boys and 2.8% of girls were obese. Significantly more boys than girls were overweight or obese. Young adolescents showed a higher prevalence of overweight and obesity, but the difference was not statistically significant.

Prevalence of body shape dissatisfaction

Almost half of boys and 73.7% of girls expressed a desire to be thinner. Less than 20% of boys and girls reported body satisfaction, circling the same figure for self-rated image and ideal image. Around 93% of overweight/obese boys and all overweight/obese girls would like to be thinner. Significantly, the majority of normal/underweight girls (68.2%) also desired to be thinner. With normal/underweight boys, 26.9% wanted to be thinner, while 49.3% wanted to be larger (Table 1).

Three-way ANOVAs were used to examine the differences and interactions among these weight-related self-perceptions by gender, weight status, and age group. Boys reported a significantly larger shape for self-rating, desired a larger shape, and showed lower body shape dissatisfaction than girls. On average, boys and girls wanted to be 0.4 and 1.4 body sizes smaller respectively than their current perceived image. The overweight/obese individuals reported significantly larger self-rated shape, larger ideal-rated shape, and greater body shape dissatisfaction than the normal/underweight group. The older adoles-

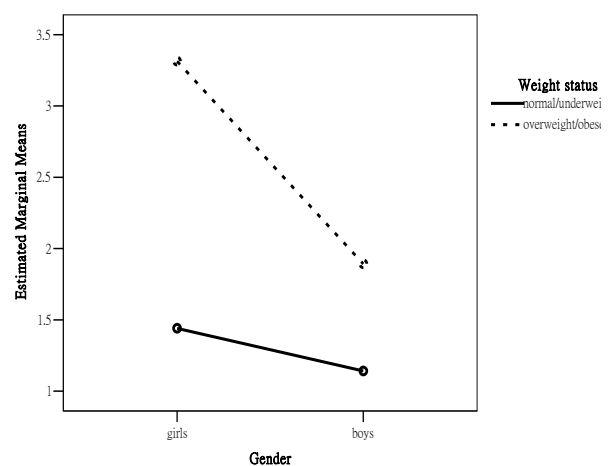


Figure 1. Interaction for body dissatisfaction between gender and weight status

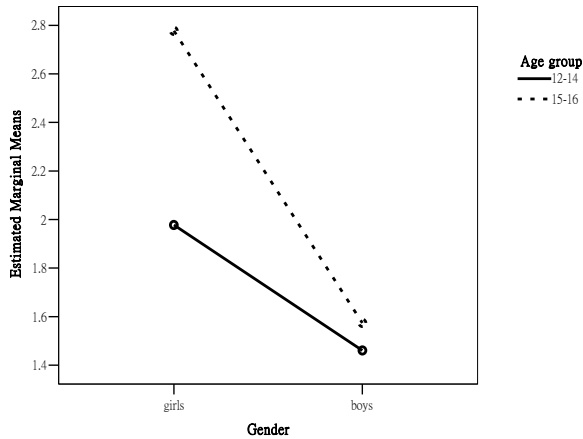


Figure 2. Interaction for body dissatisfaction between gender and age group

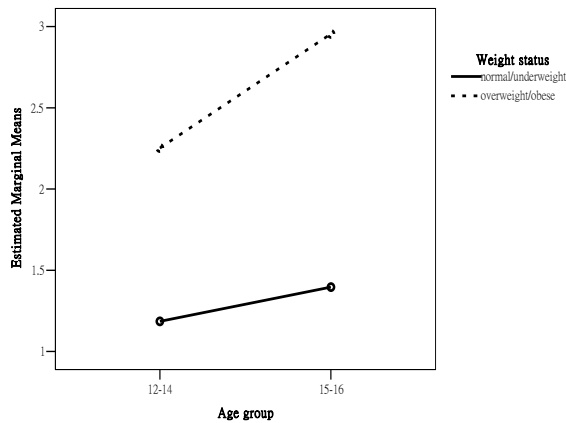


Figure 3. Interaction for body dissatisfaction between age group and weight status

cents reported a larger self-rated shape and higher body shape dissatisfaction than the young group, whereas no significant difference was found in the ideal rating between age groups.

Significant interactions were found in body shape dissatisfaction between groups (Table 2). Linear models to compare the interaction differences were carried out.¹⁰ The overweight/obese individuals were more dissatisfied with their bodies than the normal/underweight group with greater differences in girls ($p < .001$) (Figure 1). Also, the older adolescents reported higher body shape dissatisfaction than the young group with greater differences in girls ($p = .021$) (Figure 2). These findings might be explained by the higher prevalence of body shape dissatisfaction in girls when compared to boys. Additionally, the overweight/obese group had a higher prevalence of body shape dissatisfaction than the normal/underweight group with greater differences in older adolescents. However, the result was not significant ($p = .259$) (Figure 3). Failure to reach significance might be due to lack of power as numbers of older adolescents who were overweight/obese were reduced to 38.

DISCUSSION

A high proportion of Taiwanese adolescents want to be thinner and gender differences in body shape dissatisfaction are apparent. This is consistent with the relatively higher levels of body shape dissatisfaction among girls found in both Eastern and Western studies.^{11, 12} Although obesity prevalence is quite low among Taiwanese girls in this study, the pressures to be thin still seem to be profound.

The overweight/obese adolescents exhibited greater body shape dissatisfaction than the normal/underweight individuals. However, even among those normal/underweight adolescents, less than one quarter of them did not indicate body shape dissatisfaction. The majority of the normal/underweight girls still wanted to be thinner, suggesting the desire for thinness is widespread for girls regardless of actual weight status. The obesity effect may be additive with the cultural influence of the submissive frail female. The situation with boys, on the other hand, was more complex with some wanting to be thinner and others larger.¹³ Being too large is probably undesirable for boys when it is associated with fatness, but being larger may also be associated with muscularity or prowess. These findings suggest that the influences of socio-cultural ideals play a specific but different role for each gender.

Although we attempted to provide a representative sample, this is limited to one district region (Taipei County) and generalization to young people from the remainder of Taiwan or beyond should be undertaken with caution.

CONCLUSION

Body shape dissatisfaction is prevalent in Taiwanese adolescents, particularly girls. This is linked to the degree of overweight in both boys and girls but is also prevalent in girls who are not overweight or obese. Girls and boys clearly aspire to thinness but some boys would also prefer to be larger, probably because it is perceived to be associated with muscularity and prowess. This study extends our understanding of body shape dissatisfaction and its relationship with weight status in eastern cultures such as Taiwan.

AUTHOR DISCLOSURES

Li-Jung Chen, Kenneth R Fox and Anne M Haase, no conflicts of interest.

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台灣青少年對體態不滿意及肥胖的程度

目的：本研究的目的為評估在不同等級的體重下，一大樣本數中的青少男和青少女對現況體態不滿的程度。方法：調查對象是來自於台灣台北縣的國中生 883 位，年齡介於 12-16 歲之間。利用外型描繪評分尺度 (The Contour Drawing Rating Scale) 來評估年輕族群對現況體態不滿的程度。結果：台灣年輕族群對現況體態不滿的情況是普遍盛行的，尤其是女生。男生或女生對體態不滿的程度與體重過重的程度固然有相關，但有些女生，雖沒有過重或肥胖的問題，卻仍然對現況體態不滿。男生和女生都明顯地嚮往變瘦，但有一些男生則是希望能變得高大。結論：本研究增加對東方文化 (如：台灣) 中，體態不滿程度與體重狀況相關性的了解。

關鍵字：身體映象、體態不滿、肥胖、青少年、台灣