



# Boarding school influence on self-reported concern for perceived body and face morphology in Taiwan



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## ARTICLE INFO

### Article history:

Received 12 October 2015

Received in revised form 7 May 2016

Accepted 14 May 2016

Available online

### Keywords:

Body image

Boarding school

Eating disorders

Chinese

Asian

Socio-economic

## ABSTRACT

To determine the influence of boarding school on self-perceived body and facial morphology, the Body Shape Questionnaire (BSQ) and exploratory questions about the orofacial area (OFA) were administered to female boarding (B) and nonboarding (NB) students at two Catholic schools in Taiwan.

The mean total BSQ scores of Bs were significantly higher than NBs, with both being significantly higher than the published normative score but lower than probable bulimics with no significant B vs. NB difference in mean total OFA scores. Because the Bs were significantly taller and reported more orthodontic treatment than NBs, the possible confounding by the higher economic status of the Bs was minimized by finding similar significantly higher BSQ scores for the small number of Bs (5%) than the remaining NBs (95%) in the documented lower socio-economic school.

In summary, the experience of boarding in religion-dominated schools significantly increases body image concerns of adolescent females.

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## 1. Introduction

Although body shape concerns of adolescents have been investigated in Taiwan and elsewhere, there is little known about the influence of boarding school experiences, particularly Catholic schools, on adolescent females' body image.

Therefore, the overall objective of this study was to determine the influence of boarding at secondary Catholic all-girls schools in Taiwan on concerns with appearance of the body and the contiguous orofacial area. Based on greater academic and personal restrictions in Catholic boarding than nonboarding schools,<sup>1</sup> it was hypothesized that adolescent female students in boarding schools would have greater body image concerns than those in nonboarding schools, both operated by nuns. A related hypothesis was that both groups of these Taiwanese Asian female students would have greater concern for body shape than indicated in the norms of the validated Body Shape Questionnaire (BSQ) (Cooper et al., 1987). These differences were hypothesized because this study was

conducted in an Asian society, which has to deal with the influence of Western criteria for attractiveness, within a boarding school setting with the added characteristics associated with the morals and standards of an institution administered by a religious order. Asians have greater visceral and associated abdominal adiposity than Caucasians (Lim et al., 2011), and relative to each other, young Asian females are very concerned about being thin enough (Hong, 2013).

For many students, boarding school is a way of life, with benefits and problems, during some of their most formative years. Ostensibly to maintain both physical and mental health during the formative high school years, being away from home during high school years may exact a price. One specific aim of this study, therefore, was to determine the effect of this experience on concerns of Taiwanese female adolescents about the appearance of their body and contiguous orofacial area in relation to self-concept.

The pervasiveness of body dissatisfaction and its negative effect on mental and physical health are well-established (Murray et al., 2011). Although once thought to be exclusively a problem for the affluent Western world, the pernicious influence of body image concern has been increasingly noted in relation to eating disorders in Taiwan and other Asian societies (Lee et al., 2010; Shih and Kubo, 2005; Tsai et al., 2011, 2013); e.g. in Taiwan more than 80% of girls and boys were unsatisfied with their own bodies (Chen et al., 2008).

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<sup>1</sup> See, for example, newspaper article about the strict dress codes at Taiwan Catholic boarding schools. <http://www.taipetimes.com/News/taiwan/archives/2013/12/11/2003578789>.

While concern about physical appearance may vary by ethnocultural groups and socioeconomic status (Murray et al., 2011; Wang et al., 2005), Cash et al. and others found that in contrast to men, most women, regardless of age, report dissatisfaction with their bodies (Cash et al., 1986; Homand and Boyatzis, 2009; Runfolo et al., 2013; Salafia and Lemer, 2012).

While some conformity is necessary in educational institutions, individuality is also important developmentally for teenagers seeking to validate their own self-worth. With the 24/7 presence of other students and self-other comparison by peers, inherent to a boarding school setting, and especially in the locker room and showers, the boarding school environment could lead to inordinate concern about one's body and thus negative self-evaluation. Comments about weight and size by both faculty and classmates will certainly have a detrimental effect on body image (Kluck, 2010). The frequency of being teased about one's appearance has in fact been identified as a significant predictor of appearance dissatisfaction in women (Liang et al., 2011). In addition, the fear of such negative evaluation from others and the desire to conform increase body dissatisfaction, a risk factor for eating disorders (Jacobi et al., 2004).

In addition, boarding life adds stress by restrictions on times, locations, and frequency of eating with limited access to snacks. Boarders are restricted to eating every meal provided by the school and have no choice about when, what, or where they want to eat. The lack of control over food selection may perpetuate both body image and overall health concerns, since dishes prepared in large quantities are often high in fat content.

Disordered eating behavior has also been specifically associated with a boarding school environment (Mensing, 2001; Limbert, 2001). Peer pressure to be thin, for example, is one major factor in this relationship (Shomaker and Furman, 2009).

The extent of negative body image responses among boarding school students also varies considerably by culture. For example, in Turkey, students at a single-sex boarding school reported a high frequency of disturbed eating behaviors (Uzun et al., 2006), and in Israel, students of low socio-economic status and immigrant family backgrounds, from a secular boarding school, had the highest EAT-26 scores out of a group of five different Israeli schools (Latzer and Tzischinsky, 2005). Specific to Chinese adolescents, Jackson and Chen (2007) found that those with symptoms of eating disorders reported significantly more social pressure/teasing about facial appearance than their less symptomatic peers.

For some students, the ability to control or restrict eating behavior may provide a coping mechanism for the stress of alienation, competition, and conflict in boarding schools. Restrained eating behavior is often exhibited to demonstrate self-control and obtain reassurance from peers (Jarry et al., 2006).

Pertinent to the present study are ethno-cultural differences and the importance of the face relative to the body, particularly in judgments of physical attractiveness. In a recent report, young Thai woman considered facial appearance to be the most important feature, followed by body weight and shape, skin, and hair (Rongmuang et al., 2011).

With the increasing influence of Western media, cosmetic and fashion industries among Asian societies such as Taiwan have adopted Western values and health behaviors (Huang and Chang, 2005), which account in part for the increased demand for cosmetic surgery, particularly by females for cosmetic eye surgery, preferring the double eyelids of Caucasians rather than the characteristic single eyelid present in 30–60% of Asians (Liao et al., 2005). Also relevant to our study was the desire for lower facial recontouring, rhinoplasty, and rhytidectomy (Bergeron and Chen, 2009; Kwak, 2010). In contrast, however, Chinese adolescent males expressed more concerns about their overall appearance, particularly stature, finding that being too short is more distressing than too fat (Chen et al., 2006).

In contrast to Western society's obsession with thinness and physical attractiveness and the onslaught of the media, some Asian cultures still associate a moderate body mass index (BMI) or some fullness with health and prosperity (Stark-Wroblewski et al., 2005). More recently, however, this focus on the value of a generous physique has shifted toward Westerners being too fat (Hong, 2013; Swami et al., 2010), which is consistent with our demographic findings of BMI being lower in our subjects than in adolescent females in the United States.

The specific aim of this study was to compare responses to exploratory orofacial area (OFA) questions (Jones, 2009) and the validated Body Shape Questionnaire (BSQ) (Cooper et al., 1987) of female students in restrictive boarding school environments with those of students in a less restrictive home environment. It was hypothesized that boarders (Bs) would score higher on both the exploratory OFA items and validated BSQ than the non-boarders (NBs).

## 2. Material and methods

### 2.1. Psychometric instruments

Many standardized self-reporting psychometric instruments have been used to assess body perceptions by self and others (Ben-Tovim and Walker, 1991; Brown et al., 1990; Mendelson et al., 2001). In his Body Esteem Scale, Franzoi recognized self-esteem as a multidimensional construct from which the relative importance of different body parts could be determined (Franzoi and Shields, 1984). Of these psychometric methods, the Body Shape Questionnaire (Cooper et al., 1987) seemed most appropriate for the present study, the objective of which was to determine the influence of boarding at school on self-reported concern for body and facial morphology.

### 2.2. Participants

Following Institutional Review Board approval from Harvard Medical School (#M11305-111) and the equivalent from Taiwan authorities (#10-S-009), 11th and 12th grade volunteer students at two Catholic schools for girls in Taiwan were selected for participation with parental permission. One school (B) was exclusively for boarders with the option of returning home for one night each week on Wednesday (199 participants) and the other (NB) had approximately 95% of the students home-domiciled (622 participants). After pre-testing and debriefing of 30 students, the questionnaire was translated into Chinese and back-translated into English. The questionnaires were then distributed in paper format to the participating students at their schools for completion within one week, based on their perceptions and feelings during the previous four weeks. To preserve anonymity, a drop-off envelope on the teacher's desk was provided for return of the completed questionnaires.

Demographic information was collected, including age, height, weight, and reported orthodontic treatment. The questionnaires contained the 34-item, already-validated BSQ developed by Cooper et al. (1987), previously translated for use with Chinese medical students (Liao et al., 2010). "Feeling fat", for example, was only one of the concerns of women struggling with anorexia nervosa and bulimia nervosa.

To determine possible differences between Bs and NBs in concern for the orofacial area (OFA) and its relation to the BSQ, 59 exploratory OFA items were added to the BSQ for a total of 93 items. Respondents were asked to indicate the frequency and/or intensity of their concerns using a 6-point Likert-like format (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often, 6 = always). Both the BSQ and the OFA provided self-report

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