

Multidimensional Assessment of Body Dissatisfaction and Disordered Eating in Korean and US College Women: A Comparative Study

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Published online: 5 November 2006
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Abstract Body dissatisfaction was studied in 139 Korean and 102 US college women. Because tumultuous social change has produced marked conflicts between traditional Confucian values and a modern industrial society in which women hold increasing social, political, and economic power, it was hypothesized that Korean college women would have greater body dissatisfaction and more behaviors associated with disordered eating than US college women. As hypothesized, when body size (BMI) was controlled the Korean sample exhibited greater body dissatisfaction than the US sample as measured by the discrepancy between actual and ideal BMI, discrepancies between the participants' bodies and three ideal bodies on the Figural Rating Scale (Stunkard, Sorenson, & Schulsinger, *The genetics of neurological and psychiatric disorders*, Raven Press, New York, pp. 115–120, 1983), all three measures from the Body Esteem Scale (Franzoi & Shields, *Journal of Personality Assessment*, 48:173–178, 1984), and all three measures from the Body-Esteem Scale for Adolescents and Adults (Mendelson, Mendelson, & White, *Concordia University Research Bulletin*, 16:1–12, 1997). Although the Korean sample had more behaviors characteristic of disordered eating on the Eating Disorders Inventory (Garner, Olmstead, & Polivy, *International Journal of*

Eating Disorders, 2:15–31, 1983) Bulimia Scale, no differences were found between samples on scores on the Drive for Thinness Scale.

Keywords Body image · Eating disorders · Body dissatisfaction · Non-Western populations · Cross-cultural

Body dissatisfaction is an important variable for at least two reasons. First, it has been identified theoretically and empirically as a significant factor in the development and maintenance of disordered eating (e.g., Smolak & Streigel-Moore, 2004; Stice, 2002). Indeed, body dissatisfaction has been described as an “essential precursor” (Polivy & Herman, 2002, p. 192) to eating disorders. Second, body dissatisfaction has been linked theoretically and empirically to an impaired self-image, a reduced sense of personal worth, and impaired social effectiveness (e.g., Grogan, 1999). It has also been identified as a factor in suicide among young people (Eaton, Lowry, Brener, Galuska, & Crosby, 2005).

For many years body dissatisfaction and disordered eating were thought to be culture limited phenomena that were specific to affluent White women in Western societies (e.g., Root, 1990). It was generally accepted that women from non-Western societies rarely experienced these problems (Silverstein & Perlik, 1995). Women from East Asia, particularly China and Korea, societies that traditionally have associated round faces and mild plumpness with female beauty and good health (Han, 2003; Lippincott & Hwang, 1999), were thought to be particularly unlikely to develop body dissatisfaction, weight concerns, or eating disorders. Because women in these societies generally have smaller and slimmer bodies than White Westerners, they would also be expected to have less difficulty achieving the Western thin body ideal in the unlikely event that they

The authors thank Yoon Kim for her assistance.

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would choose to pursue it. Even if a low incidence of body dissatisfaction and disordered eating in East Asian cultures was once true, and there is reason to question if it ever was (e.g., Gordon, 2000; Lee, 2001), it now appears that body dissatisfaction and disordered eating may be nearly as common in East Asian societies as they are in North America and Western Europe (Gordon, 2000; Lee & Lee, 2000).

An understanding of body dissatisfaction and eating disorders in Asian populations has been made much more difficult by the tendency for Western researchers to treat Asians as a homogenous group. In some studies, particularly those with immigrant samples, this practice may reflect difficulties in obtaining sufficient numbers of research participants. However, it may also reflect a tendency for Westerners to stereotype Asians. The unfortunate practice of treating Asians as a homogeneous group has obscured large and very important differences between Asian societies (e.g., Oyserman, Coon, & Kimmelmeier, 2002; Yates, Edman, & Arguette, 2004).

Our limited understanding of body dissatisfaction and eating disorders in Asian populations has been further obscured by the multiple meanings of the term *Asian*. The North American literature usually uses the term *Asian* to refer to persons from East Asia (e.g., China, Korea, Japan) or Southeast Asia (e.g., Viet Nam, Cambodia). In contrast, the Western European, particularly the UK, literature usually uses the term *Asian* to refer to persons from India or Pakistan (Kennedy, Templeton, Gandhi, & Gorzalka, 2004). The common practice of using the term *Asian* without further specification greatly increases the risk of inappropriate and misleading generalizations.

Within Western societies it has been repeatedly demonstrated that the incidence and manifestations of body dissatisfaction and eating disorders sharply differ among ethnic groups (e.g., Altabe, 1998; Smolak & Streigel-Moore, 2004; Story, French, Resnick, & Blum, 1995). In recent years similar differences have been reported from East Asian societies. For example, Japan and Taiwan are both highly developed nations with intense exposure to Western media and ideals. Although the body size of college women from Japan and Taiwan does not differ, college women in Japan have much greater body dissatisfaction than their Taiwanese cohorts do (Shih & Kubo, 2005). Similar differences in body dissatisfaction have been reported between Chinese and Japanese immigrants to Hawaii (Yates et al., 2004). These and other studies indicate that an appreciation of ethnic differences may be as important in understanding body dissatisfaction and disordered eating in Asian countries as it is in Western countries.

Although there is a substantial amount of information on the incidence and nature of body dissatisfaction and eating disorders in Japan (e.g., Pike & Borovoy, 2004), and to a

lesser extent in China (e.g., Huon, Mingyi, Oliver, & Xiao, 2002; Lee & Lee, 2000), far less is known about these phenomena in Korea (Keel & Klump, 2003; Tsai, 2000). Because it is now clear that results from one East Asian culture cannot be generalized automatically to other East Asian cultures, it is important to study body image and related issues in each specific East Asian culture (Ryu, Lyle, & McCabe, 2003).

It is clear that body dissatisfaction and disordered eating now appear in much, arguably all, of the developed and developing world, but why this is the case is not completely understood. Many authors have attributed this spread to what Lee (2004) characterized as the "...homogenizing toxin of Westernization" (p. 617). A major and extensively studied component of this "toxin" is Western media with its ubiquitous portrayals of extremely thin models and frequent emphasis on a woman's responsibility to mold her body to idealized Western standards through diet, exercise, and, if all else fails, surgery (e.g., Bordo, 1993; Holmstrom, 2004; Levine & Smolak, 1996; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Although Western media have a pervasive presence throughout much of the world, it is very important to recognize that the meaning, significance, and influence of Western media are strongly influenced by the cultural context in which they appear (Anderson-Fye, 2004; Becker, 2004; Miller & Pumariega, 2001). In this respect, it is important to recall that both Japan and Taiwan have been heavily exposed to Western media, yet they differ greatly in the level of body dissatisfaction among young women.

Although many variables have been associated with body dissatisfaction and disordered eating (e.g., Polivy & Herman, 2002), there is an emerging consensus that sociocultural factors are the most potent (Anderson-Fye & Becker, 2004). Extensive and insightful discussions of these factors are provided by Gordon (2001), Silverstein and Perlik (1995), and Nasser (1997). Sociocultural factors include media effects, but they also include such important variables as gender roles, economic opportunities, religious values, and the cultural objectification of women. Rapid and disruptive social change, particularly changing roles for women, political unrest, and the adoption of market economies, seem to be particularly important elements in the sharp increase in body dissatisfaction and disordered eating found in non-Western societies (Gordon, 2000; Nasser 1997; Nasser, Katzman, & Gordon, 2001). Indeed, over 15 years ago DiNicola (1990) argued that anorexia nervosa in non-Western cultures was a product of cultural change. The link between cultural changes, particularly in roles for women, is most obvious in non-Western cultures (e.g., Gordon, 2001; Nasser, 1997), but these links are also evident in Western society. For example, the two decades in the last century with the greatest change in roles for US women, the 1920s and the 1970s, were also the two

decades in which the models in US fashion magazines were the most slender and least curvaceous (Silverstein & Perlik, 1995). It is also interesting to note that the first descriptions of what we now call anorexia nervosa were published by Lasegue and Gull in the 1870s, a decade marked by disruptive social changes produced by industrialization and a nascent women's movement (Nasser, 1997).

There are intriguing parallels between increases in body dissatisfaction in Asian countries and increases in body dissatisfaction in the countries of Eastern Europe. As was once thought to be the case with Asian countries, body dissatisfaction and disordered eating were described as very rare among the formerly socialistic countries in Eastern Europe (Catina, Boyadjieva, & Bergner, 1996; Catina & Joja, 2001; Silverstein & Perlik, 1995). With the collapse of the Soviet Union many of these countries experienced enormous, often tumultuous, social, political, and economic changes in a rush to embrace democracy and a market economy. Although these changes dramatically influenced the lives of both men and women, the changes experienced by women, particularly with respect to social roles, were arguably greater than those experienced by men (Catina & Joja, 2001). Research indicates that these changes were almost immediately paralleled by increases in body dissatisfaction and disordered eating (Bilukha & Utermohlen, 2002; Catina & Joja, 2001; Papezova, 2002; Rathner, 2001; Wlodarczyk-Bisaga & Dolan, 1996; Wlodarczyk-Bisage, Dolan, McCluskey, & Lacey, 1995).

Like their cohorts in Eastern Europe, young people in Korea have experienced marked social change. Western influences began to appear in Korea with the Korean conflict (1950–1953), but large and rapid changes did not appear in Korean society until the decade of the 1980s (Jung, 2003; Shin & Rutkowski, 2003). Between 1980 and 2000 there were enormous changes in the social, economic, and political life of Korea. Korea became an economic and industrial powerhouse, a repressive military dictatorship was replaced by a vigorous democracy, and a marked increase in real income was accompanied by corresponding improvements in diet, housing, and length of life (Shin & Rutkowski, 2003). Among the factors involved in these changes were growing political, social, and economic power for women and an increasingly visible and effective women's movement (Jung, 2003). In the middle 1980s Korean women's earnings began to rise relative to men's, and women began to attend college in increasing numbers (Rodgers, 1998). At the present time 72% of Korean women attend college, which has been reported to be the highest rate in the world (Lee & Caryl, 2005).

Although many of the changes in Korea parallel changes in other societies, it seems likely that the changes in Korea have been qualitatively and quantitatively more extreme than those in many other, particularly Western, societies.

This is because of the Confucian philosophy that has dominated Korean social, political, and family life for over 500 years (Bell & Chaibong, 2003; Lee, Um, & Kim, 2004). Three elements in this philosophy are particularly important in understanding the contrast between traditional Korean society and traditional Western values. These elements are gender roles, the importance of the family relative to the individual, and the importance of avoiding interpersonal conflict.

Confucian philosophy emphasizes extremely rigid gender roles, particularly for women. The central and organizing element in these gender roles is women's subordination and submissiveness to men: Girls are to be submissive to their father, wives are to be submissive to their husband, and widows are to be submissive to their eldest son. As part of these strict gender roles, Confucian tradition rigidly controls women's sexuality and limits women's roles to the home (Jung, 2003).

In addition to prescribing a rigid and repressive patriarchy,¹ Confucian teachings, particularly as they were interpreted in the Joseon dynasty (1392–1910), also emphasized the crucial role of the family. In sharp contrast to Western cultures where the individual is the central element in society, in a Confucian society the most important element is the family (Chaibong, 2003). In Western individual-oriented societies, the role of the family is to support the goals of the individual. In contrast, in the Confucian tradition the primary task of the individual is to serve the family (Chaibong, 2003). This service to the family involves protecting it from shame and dishonor. Children, particularly girls, and women who fail to conform to Confucian standards bring shame, dishonor, and social disgrace, not just to themselves but to their entire family, including their remote ancestors. This threat to family honor places an enormous emotional burden on young women that has no clear parallel in Western, individual-oriented, societies (e.g., Chaibong, 2003). It may also motivate family members vigorously to pressure young women to conform to traditional values.

Another core Confucian value is the importance of social harmony, respectful and nonconfrontational interpersonal relationships, and the solution of potential conflicts through compromise and accommodation (Bell & Chaibong, 2003). Confucianism strongly disapproves of the profit motive, self-interest, and confrontation solutions to conflict such as civil litigation.

For a woman to be successful in a market economy, she must be assertive, competitive, and put her obligations to

¹ Although Confucianism is typically associated with a strong patriarchy and restricted roles and privileges for women, not all scholars agree that this is an unavoidable consequence of Confucian thought. For an alternative view of gender differences in the Confucian tradition, see Yee (2003).

herself above her obligations to others. These characteristics violate traditional women's roles, bring potential disgrace to the woman's family and to herself, and are in marked contrast to traditional Confucian teachings about relationships and the avoidance of conflict (Bell, 2003; Chan, 2003). Korean women (and men) face the enormously difficult task of balancing the new freedoms and opportunities produced by growing gender equality in education, political influence, and economic power with their deeply rooted Confucian values. Although their conflicts have obvious parallels with those of their cohorts in other societies, the special features of a Confucian society, coupled with the breadth, depth, and rapidity of social change, arguably make these conflicts worse for Korean women (and men) than for members of Western societies.

Survey research by Shin and Rutkowski (2003) indicates that, as would be expected, Koreans have had appreciable difficulty adjusting to the enormous and pervasive changes of the last 20 years. The authors reported that representative samples of Koreans had more negative perceptions of daily life and a lower sense of well being in 2001 than in 1981. Furthermore, they reported that the majority of Koreans perceived the Korea of 2001 as a less desirable place to live than the Korea of 1981. Although approximately 80% of Koreans reported that they were satisfied with their marriages and family life, Shin and Rutkowski, (2003) suggested that the importance of the family, the central organizing feature of traditional Korean society, appears to be lessening.

Given the relationships between tumultuous social change, body dissatisfaction, and eating disorders, Korean women would be expected to have experienced a large increase in body dissatisfaction and eating disorders. Although there has been only limited study of body dissatisfaction and disordered eating in Korea, the available information is consistent with the hypothesis that body dissatisfaction is high and increasing (Tsai, 2000). For example, Kim and Kim (2001) found that late adolescent girls, who were already thin (BMI=20) by Western standards, wished to be still thinner with a desired BMI of 17.3. Similarly, Kim and Yoon (2000) found that 72% of normal weight Korean adolescents wanted to lose weight, and Ryu et al. (2003) reported a high incidence of dieting and binge eating among Korean girls and young women. Ko and Cohen (1998) found that 81% of Korean college women, although their mean BMI was a relatively low 19.4, had a desired BMI of 18 and wanted to lose a mean of 4.0 kg. They also reported that Korean college women scored higher than a comparison sample of Korean-American college women on the dieting and bulimia subscales of the Eating Attitudes Scale (EAT, Garner, Olmstead, Bohr, & Garfinkel, 1982). Similarly, Lee et al. (1998) reported a relatively high level (8.5%) of extreme scores on the EAT

in a representative sample of Korean adults. In addition, the incidence of cosmetic surgery appears to be high in Korea (White, 2005). Indeed, Korea has been described as having "plastic surgery fever," and newspapers have reported "conservative" estimates that 50% of Korean women have had some type of plastic surgery (White, 2005). Given this context, it is perhaps not surprising that *Vogue* and *Elle*, magazines strongly identified with the Western thin body ideal, are the most popular magazines among Korean college women (Han, 2003). All of these characteristics are exactly what would be expected if rapid social change were an important contributor to body dissatisfaction and disordered eating.

The present study was designed to investigate body dissatisfaction and disordered eating in a sample of Korean college women. Results from this sample were compared with results from a parallel sample of college women in the United States. The comparisons with the US sample are important because most of the research on body dissatisfaction and disordered eating has been done with US samples, and most cross-cultural comparisons of US and other samples have shown that the highest level of body dissatisfaction and disordered eating is in the US samples. It is interesting that, on the very few occasions where nonimmigrant groups have been found to have greater body dissatisfaction or disordered eating than US comparison samples, these groups were usually described as "Asian" (Wildes, Emery, & Simons, 2001).

Body dissatisfaction is a complex concept that has been measured in many ways (for reviews see Grogan, 1999, or Thompson, 1996). Relationships between these multiple measures are often unknown, but it has been shown that relationships found with one type of measure may not be found with another (e.g., Forbes et al., 2005; Silberstein, Striegel-Moore, Timko, & Rodin, 1988; Thompson, 1996). It is generally accepted that the understanding of complex constructs is facilitated by the use of multiple dependent measures (Anastasi & Urbina, 1997). This principle would appear to be particularly important in cross-cultural comparisons where many of the relevant variables have not been identified and dependent measures are often exposed to the inevitable imprecision of translation.

Three of the most common measures of body dissatisfaction are those based on differences between actual and desired body size, those based on ratings of satisfaction with specific body parts, and those based on affective evaluations of appearance. Differences between actual and desired body size are usually determined in one of two ways. The most direct way is to ask participants for their actual and desired weight. These values can be compared directly or after converting them to BMIs. The other common way to determine differences between actual and desired body size is through the rating of body silhouettes.

Participants are typically asked to identify the silhouette that most closely resembles their own body and the silhouette that most closely represents their ideal body. The discrepancy between these two silhouettes is used as a measure of body dissatisfaction (e.g., Rozin & Fallon, 1988). Ratings of specific body parts can be studied individually, but they are often scored on multiple factor-analytically determined scales (e.g., Franzoi & Shields, 1984). It is important to note that, although figure ratings and ratings of specific body parts both have high face validity, they appear to be reasonably independent and cannot be assumed to be interchangeable (e.g., Forbes et al., 2005). Like ratings of specific body parts, when measures of body dissatisfaction are based on affective evaluations of appearance the items are usually scored on multiple factor-analytically determined scales (e.g., Mendelson, Mendelson, & White, 2001). Because there was no a priori way to identify which type of measure would be most useful with a Korean sample, we employed widely used measures of all three types. Established brief measures of disordered eating were also employed.

Cross-cultural comparisons of body dissatisfaction or disordered eating are often confounded by differences in body size. As Ackard, Croll, and Kearny-Cook (2002) and Gupta, Chaturvedi, Chandarana, and Johnson (2001) have noted, the relationship between body size and body dissatisfaction is well established, yet researchers have often failed to control for body size, even where large differences in body size are present. This is a very important issue because controlling for body size may substantially change the results of cross-cultural comparisons (Forbes, Doroszewicz, Card, & Adams-Curtis, 2004; Wardle, Bindra, Fairclough & Westcombe, 1993). Because a substantial difference in body size was expected between Korean and US college-women, we controlled for body size in our analyses.

Because there have been only a few investigations of body dissatisfaction in Korea, and it is clearly unwarranted to generalize data from other Asian societies, hypotheses concerning the relative degree of body dissatisfaction in Korea and the United States must be made with caution. However, the available empirical evidence, along with anecdotal reports and newspaper accounts, suggests that a high level of body dissatisfaction is to be expected in the Korean sample. Because Korean women's rapid and tumultuous transition from a society based on Confucian values to a modern, industrially-based market economy would appear to be much more disruptive than the transitions faced by their peers in the US, we hypothesized that the Korean sample would have greater body dissatisfaction than the US sample. Because of the established relationship between body dissatisfaction and eating disorders, we also hypothesized that the Korean sample would

have more behaviors associated with disordered eating than would the US sample.

Method

Participants and Procedure

The participants from Korea were women from universities in Seoul and Kyunggi province and those from the United States were women from a university in the mid-Atlantic region. They were volunteers whose data were collected during regular class periods in undergraduate courses. All participants received extra credit for their participation. All responses were anonymous. The women were informed in writing, and again in oral directions, of their right to decline to participate at any time. No students from Korea or the United States declined to participate.

Eleven participants, all from Korea, omitted crucial demographic information. Therefore, data from these participants were discarded. To maximize sample homogeneity, data from participants who were older than age 24 (nine from Korea and two from the United States) were also discarded. The final samples contained 139 participants (ages 18–24) from Korea and 102 participants (age 18–24) from the United States. The age of the sample from Korea ($M=20.53$, $SD=1.10$) was older than the age of the sample from the United States ($M=19.59$, $SD=1.28$), $F(1, 239)=37.60$, $p<0.001$, partial $\eta^2=0.136$.² All of the Korean sample was of Korean ethnicity. The self-reported ethnicities of the US sample were: European American=89 (87%), African American=6 (6%), Asian American=2 (2%), Hispanic American=2 (2%). Three participants (3%) chose the "other" category to describe their ethnicity.

The self-reported height (cm) of the Korean sample ($M=162.96$, $SD=4.94$) was less than the self-reported height of the US sample ($M=165.29$, $SD=7.18$), $F(1, 239)=8.91$, $p<0.003$, partial $\eta^2=0.036$. The self-reported weight (kg) of the Korean sample ($M=51.80$, $SD=5.96$) was less than that of the US sample ($M=59.47$, $SD=10.26$), $F(1, 239)=53.21$, $p<0.001$, partial $\eta^2=0.182$. Participants were also asked to report their ideal weight. The ideal weight of the Korean sample ($M=47.60$, $SD=3.50$) was less than that of the US sample ($M=54.90$, $SD=7.19$), $F(1, 239)=108.63$, $p<0.001$, partial $\eta^2=0.312$.

² In the Korean culture infants are considered to be 1 year of age at birth. To allow for comparison with ages reported by the US sample, the ages of the Korean sample were converted to the Western convention for reporting age by subtracting 1 year from the age reported by the Korean participants.

Measures

After they completed basic demographic items, the participants completed the Body Esteem Scale (BES; Franzoi & Shields, 1984). This measure consists of 35 items describing specific body parts or properties such as *thighs*, *muscular strength*, and *weight*. Participants indicate their feelings about these properties on a five-point scale anchored by *have strong negative feelings* and *have strong positive feelings*. The BES has three factor-analytically derived dimensions of body esteem for women: Sexual attractiveness, weight concern, and physical condition. Separate coefficient alphas for each measure were computed for the Korean and the US samples. Coefficient alphas were: Sexual Attractiveness, Korea=0.70, US=0.75; Weight Concern, Korea=0.78, US=0.89; Physical Condition, Korea=0.76, US=0.88. These values are similar to those reported by Franzoi and Shields (1984).

Two subscales from the Eating Disorders Inventory (EDI; Garner, Olmstead, & Polivy, 1983) were included. These subscales were chosen because they are brief measures of two important properties of disordered eating. The Drive for Thinness Scale (EDI-DFTS) contains seven items describing restrictive eating practices and a desire to lose weight. Sample items include: *I think about dieting* and *I am preoccupied with the desire to be thinner*. The Bulimia Scale (EDI-BS) contains seven items describing bingeing or purging. Sample items include: *I stuff myself with food* and *I have the thought of trying to vomit in order to lose weight*. Both scales were answered on five-point scales of agreement anchored by *strongly disagree* and *strongly agree*. Coefficient alphas were: EDI-DFTS, Korea=0.86, US=0.85; EDI-BS, Korea=0.82, US=0.82. These values are similar to those reported by Garner et al. (1983).

The Body-Esteem Scale for Adolescents and Adults (BESAA; Mendelson et al., 1997) consists of 23 statements reflecting affective evaluations of body characteristics. The BESAA contains three factor-analytically derived measures. The BESAA-Appearance scale measures general feelings about appearance. Sample items are: *I like what I look like in pictures* and *I wish I looked better*. The BESAA-Weight measures general feelings about weight. Sample items are: *I am preoccupied with trying to change my body weight* and *I really like what I weigh*. The BESAA-Attribution measures others' evaluations about one's body and appearance. Sample items are: *People my age like my looks* and *I think my appearance would help me get a job*. Participants indicate the frequency of their agreement with the BESAA statements using a five-point scale anchored by *never* and *always*. Although there are some similarities between the BESAA-Weight and to a lesser extent the BESAA-Appearance measures and measures from the BES, there are no parallels between the

BESAA Attribution Scale and the BES measures. In addition, BES items usually refer to specific body parts or functions whereas BESAA items tend to be less focused and more global. Coefficient alphas for the BESAA measures were: BESAA-Appearance, Korea=0.75, US=0.90; BESAA-Weight, Korea=0.83, US=0.78; BESAA-Attribution, Korea=0.85, US=0.92. These values are similar to those reported by Mendelson et al. (2001).

The final measure was the Figure Rating Scale (FRS) by Stunkard, Sorenson, and Schulsinger (1983). The FRS consists of nine line drawings of female bodies that are consecutively ordered and numbered from very small (1) to very large (9). The participants were asked to make four choices: 1. *Please choose the body type that most clearly matches your own (your current figure)*. 2. *Please choose the body type that you would most like to have (your ideal figure)*. 3. *Please choose the body type that most women would like to have (the cultural ideal)*. 4. *Please choose the body type you believe most men would like best (the attractive figure to men)*.

All materials were translated to Korean by the bilingual and bicultural first author. To establish equivalence, the Korean materials were back translated into English by a bilingual graduate student in Korea. Minor corrections were then made to the Korean version by the first author.

Results

The self-reported height, self-reported weight, and desired weight of the participants were used to compute the participants' BMI and ideal BMI using the standard formula of weight (kg)/ height² (m). The BMI of the Korean sample ($M=19.49$, $SD=1.95$) was less than that of the US sample ($M=21.77$, $SD=3.98$), $F(1, 239)=36.91$, $p<0.001$, partial $\eta^2=0.134$. Similarly, the ideal BMI of the Korean sample ($M=17.93$, $SD=1.09$) was less than that of the US sample ($M=20.18$, $SD=2.69$), $F(1, 239)=79.76$, $p<0.001$, partial $\eta^2=0.250$.

Two kinds of discrepancy scores were computed as measures of body dissatisfaction. The first was the discrepancy between the participants' actual and ideal BMI. The second were discrepancy scores computed from the FRS measures. These discrepancy scores were computed by subtracting the number of the silhouette the participant chose as representing the body she would like to have (Body 2), the number of the silhouette the participant chose as representing the body preferred by other women (Body 3), and the number of the silhouette the participant chose as representing the body she perceived as preferred by men (Body 4) from the silhouette the participant chose to represent her actual body (Body 1). A positive discrepancy score indicates that

the participant perceived her actual body as larger than the ideal body.

These discrepancy scores are direct measures of body dissatisfaction. To determine if body dissatisfaction was present, separate repeated measures analyses of variance (ANOVA) were computed for each country on the difference between actual and ideal BMI, and the differences between Body 1 and Body 2, Body 1 and Body 3, and Body 1 and Body 4. The results for the Korean sample were, respectively, $F(1, 138)=144.58$, $p<0.001$, partial $\eta^2=0.512$, $F(1, 138)=132.81$, $p<0.001$, partial $\eta^2=0.490$, $F(1, 138)=138.00$, $p<0.001$, partial $\eta^2=0.626$, and $F(1, 138)=123.23$, $p<0.001$, partial $\eta^2=0.472$. The results for the US sample were, respectively, $F(1, 101)=93.83$, $p<0.001$, partial $\eta^2=0.482$, $F(1, 101)=128.50$, $p<0.001$, partial $\eta^2=0.560$, $F(1, 101)=68.67$, $p<0.001$, partial $\eta^2=0.405$, and $F(1, 101)=55.82$, $p<0.001$, partial $\eta^2=0.356$. These comparisons indicated that both the Korean sample and the US sample displayed body dissatisfaction on each of the four measures.

To determine if comparisons between countries would be confounded by differences in body size, correlations were computed between actual BMI and the actual - ideal BMI discrepancy score, the four body ratings from the FRS, the three FRS body discrepancy scores, the three BES measures, the three BESAA measures, the EDI-DFTS, and the EDI-BS.

Holm's (1979) sequential Bonferroni corrections were employed to maintain a familywise ($n=13$) alpha of 0.05. Significant correlations were found between the participants' BMI and Body 1, Korea $r=0.73$, US $r=0.73$; Body 2, US $r=0.58$; Body 1 - 2, Korea $r=0.66$, US $r=0.46$; Body 1 - 3, Korea $r=0.69$, US $r=0.64$; and Body 1 - 4, Korea $r=0.64$, US $r=0.54$. In addition, significant correlations were found between the participants' BMI and the BES Weight Concern Scale, Korea $r=-0.41$, US $r=-0.43$; the BESAA Weight Scale, Korea $r=-0.49$, US $r=-0.40$; the EDI-DFTS, US $r=0.39$; and the EDI-BS, Korea $r=0.33$, US $r=0.55$. Because these correlations indicate that comparisons between samples would be confounded by differences in BMI, the planned statistical controls for BMI were employed.³

The measures were logically divided into six groups: (1) the actual - ideal BMI discrepancy score, (2) the values of the four FRS bodies, (3) the three FRS discrepancy scores, (4) the three BES measures, (5) the three BESAA measures, and (6) the two EDI subscales. All analyses employed multivariate analysis of covariance (MANCOVA) or univariate analysis of covariance (ANCOVA)

with actual BMI as covariate. The adjusted means, standard deviations, and results of the univariate ANCOVAs for all comparisons appear in Table 1.

A significant ANCOVA indicated that the actual - ideal BMI discrepancy was larger in the Korean sample than in the US sample, $F(1, 238)=44.33$, $p<0.001$, partial $\eta^2=0.157$.

A significant MANCOVA on the four FRS body ratings, Wilks' $\lambda=0.924$, $F(4, 235)=14.81$, $p<0.001$, partial $\eta^2=0.201$, was followed by a separate ANCOVA for each of the measures. Parallel significant MANCOVAs for the three body discrepancy scores, Wilks' $\lambda=0.800$, $F(3, 236)=19.66$, $p<0.001$, partial $\eta^2=0.200$, were followed by univariate ANCOVAs.

A significant MANCOVA for the three BES measures, Wilks' $\lambda=0.736$, $F(3, 236)=28.20$, $p<0.001$, partial $\eta^2=0.264$, was followed by univariate ANCOVAs. Similarly, a significant MANCOVA for the three BESAA measures, Wilks' $\lambda=0.803$, $F(3, 236)=19.25$, $p<0.001$, partial $\eta^2=0.197$, was followed by univariate ANCOVAs.

A significant MANCOVA on the two EDI measures, Wilks' $\lambda=0.921$, $F(2, 237)=10.14$, $p<0.001$, partial $\eta^2=0.079$, was followed by univariate ANCOVAs on each of the measures.

Table 1 also contains unadjusted values for each of the variables. In procedures that paralleled the previous analyses, significant Multivariate Analyses of Variance (MANOVAs) were followed by univariate Analyses of Variance (ANOVAs). The results of the ANOVAs (reported in parentheses) are shown in Table 1. These unadjusted values are reported to show the size of the bias introduced by group differences in body size and to allow comparisons with other data sets that do not include adjustment for body size. Because the samples differ in body size, these unadjusted values should not be used to compare the Korean and US samples.

Inspection of the results in Table 1 indicates that the Korean sample reported a greater discrepancy between their actual and ideal BMI and a greater discrepancy between the FRS figure that represents their own body and the figures that represent the three comparison bodies. As hypothesized, on all of these measures the Korean group exhibited greater body dissatisfaction than the US group did. It should be noted that only one of these four comparisons would have been statistically significant if adjustments had not been made for group differences in BMI.

Also as hypothesized, the Korean sample had greater body dissatisfaction on each of the three BES measures and on each of the three BESAA measures.

Inspection of the EDI measures indicates that, as hypothesized, the Korean sample scored higher than the US sample on the EDI-BS. This result indicates that there

³ The Korean and US sample also differed in age. However, no significant correlations were found between age and any of the other variables in the study. As a consequence, corrections for age differences were not necessary.

Table 1 Adjusted means and standard deviations for the Korean and US samples (unadjusted values appear in parentheses).

	Korean		US		F ^a	Partial eta ²
	M	SD	M	SD		
Actual – ideal BMI	1.98 (1.57)	1.05 (1.54)	1.03 (1.59)	1.06 (1.65)	44.33*** (0.01)	0.157
FRS bodies						
Body 1	3.64 (3.41)	0.75 (0.98)	3.07 (3.40)	0.76 (1.08)	30.98*** (0.00)	0.115
Body 2	2.43 (2.35)	0.63 (0.60)	2.40 (2.51)	0.63 (0.73)	0.07 (3.70)	
Body 3	2.03 (2.03)	0.67 (0.59)	2.39 (2.38)	0.68 (0.73)	15.32*** (17.24***)	0.060 (0.067)
Body 4	2.34 (2.30)	0.74 (0.75)	2.52 (2.57)	0.74 (0.68)	3.56 (8.03**)	(.033)
FRS discrepancy						
Body 1 - 2	1.22 (1.06)	0.87 (1.08)	0.67 (0.89)	0.87 (0.79)	21.53*** (1.71)	0.192
Body 1 - 3	1.62 (1.37)	0.91 (1.07)	0.69 (1.02)	0.91 (1.24)	56.41*** 5.65*	0.192 0.023
Body 1 - 4	1.31 (1.10)	1.00 (0.117)	0.55 (0.83)	1.00 (1.13)	31.33*** (3.17)	0.116
BES						
Sexual attractiveness	39.72 (39.58)	6.07 (5.46)	47.25 (47.42)	6.14 (6.47)	82.60*** (103.11***)	0.258 (0.301)
Weight concern	27.87 (28.86)	6.63 (6.01)	32.06 (30.71)	6.70 (8.34)	21.45*** (3.97*)	0.083 (0.016)
Physical condition	27.08 (27.40)	5.60 (4.99)	32.02 (31.58)	5.65 (6.17)	41.74*** (33.95***)	0.149 (0.124)
BESAA						
Appearance	3.00 (3.03)	0.63 (0.54)	3.32 (3.27)	0.63 (0.71)	14.73*** (8.96**)	0.059 (0.036)
Attribution	2.80 (2.83)	0.70 (0.75)	3.55 (3.51)	0.71 (0.60)	61.43*** (57.64***)	0.206 (0.195)
Weight	2.64 (2.76)	0.77 (0.75)	3.22 (3.06)	0.78 (0.91)	30.26*** (7.97**)	0.113 (0.032)
EDI measures						
DFTS	22.70 (22.24)	6.36 (5.98)	21.86 (22.52)	6.41 (6.78)	1.02 (0.11)	
BS	18.66 (18.35)	5.78 (5.65)	15.25 (15.67)	5.84 (5.73)	18.80*** (13.14***)	0.073 0.052

^a ANCOVA $df=(1, 238)$; ANOVA $df=(1, 239)$

* $p<0.05$; ** $p<0.01$; *** $p<0.001$.

are more behaviors characteristic of disordered eating in the Korean sample. However, contrary to our hypothesis, the Korean and US samples did not differ on the EDI-DFTS, which indicates no difference between the groups in their degree of drive for thinness.

Discussion

The most direct measures of body dissatisfaction, and the measures with the greatest face validity, are the discrepancy scores between actual and ideal BMI and the discrepancies

between the FRS silhouette chosen to represent the participant's own body and the silhouettes chosen to represent the three comparison bodies. On all four of these measures both groups exhibited substantial body dissatisfaction, but, as hypothesized, in each case the Korean sample exhibited significantly greater dissatisfaction than the US sample did. Also as hypothesized, on measures constructed from ratings of specific body parts or characteristics (i.e., the Sexual Attractiveness, Weight Concern, and Physical Condition scales of the BES), the Korean sample exhibited more body dissatisfaction than the US sample did. Similarly, the Korean sample, as hypothesized, exhibited more body dissatisfac-

tion on measures based on affective evaluations of appearance (i.e., the Appearance, Attribution, and Weight scales of the BESAA). Because four different families of measures, a total of ten individual measures, produced the same results, the present study offers strong, multidimensional support for the hypothesis of greater body dissatisfaction in the Korean sample than in the US sample.

The existence of body dissatisfaction in the Korean and US samples is not surprising. After all, body dissatisfaction in young women is regularly reported throughout the world. However, the finding of a level of body dissatisfaction in the Korean sample that consistently and substantially exceeds that found in the US sample, although not completely without precedent (e.g., Wildes et al., 2001), is certainly unusual. Although the design of our study did not allow us to determine why the Korean sample had more body dissatisfaction than the US sample, it is important to note that our results are exactly what would be expected if: (1) body dissatisfaction is a response to marked cultural change, particularly changes in women's roles, and (2) young women in Korea have experienced greater role conflicts than young women in the US. It is also important to note that because the US sample would have been exposed to far more Western media than the Korean sample our results cannot be attributed simply to the influence of Western media on the Korean sample.

Given the well-established relationship between body dissatisfaction and disordered eating (e.g., Stice, 2002), we hypothesized that the Korean sample would score higher on the EDI-DFTS and on the EDI-BS. The hypothesis of a higher score on the EDI-BS, a score that indicates a greater frequency of behaviors associated with disordered eating, was confirmed. In view of the greater body dissatisfaction in the Korean sample, the presence of more behaviors associated with disordered eating is not surprising. However, contrary to our hypothesis and inconsistent with our other results, neither the adjusted nor unadjusted comparisons on the EDI-DFTS were significant.

There is increasing evidence that a drive for thinness or a "fat phobia" may not be either an essential or a universal feature of disordered eating (Keel & Klump, 2003; Lee, 2001). For example, there is reasonably consistent evidence that a drive for thinness is not associated with eating disorders in China (Lee, 1993, 2001; Lee & Lee, 2000). Keel and Klump (2003) suggested that the drive for thinness may be limited to cultures that have historically idealized the thin body. Although, as we indicated above, generalizations across East Asian cultures are unwarranted, it is interesting to note that historically both China and Korea have, at least to some extent, admired a modestly plump female body and associated thinness with ill health and reduced fecundity (Han, 2003; Lippincott & Hwang, 1999). This suggests that similar cultural mechanisms,

including, but perhaps not limited to, a traditional association of modest plumpness with attractiveness may be operating in China and Korea.

In the present study we employed self-reported heights and weights to compute the participants' BMI. Because college-aged women often underestimate their weight (e.g., Betz, Mintz, & Speakmon, 1994; Jacobson & DeBock, 2001), obtaining BMIs from self-reported measures might appear to be a questionable procedure. However, the cumbersome and intrusive process of directly measuring height and weight was not necessary because correlations between BMIs computed from actual measures and from self-reported measures are extremely high (e.g., Brener, McManus, Galuska, Lowry, & Wechsler, 2003; Cohn & Adler, 1992; Stewart, 1982). Because of these high correlations, BMIs computed from self-reported measures are routinely used for many research purposes (e.g., Bulik et al., 2001; Cohn & Adler, 1992; McCabe, McFarlane, Polivy, & Olmstead, 2001). It is also important to note that in the present study we were not concerned with the specific values of BMI but only with the association between BMI and measures of body dissatisfaction. Because systematic errors would not be expected to influence these associations, even if they are present, systematic errors would have little or no influence on our results.

Like nearly all cross-cultural comparisons, we used measures that were translated from their original English. As King (1993) noted, translations, even when carefully done by experienced bilingual and bicultural translators, may be problematic. This is a lesser concern in the present study than in some others because two of the central measures, the FRS and BMI, required very little translation. Because translations of the BES, the BESAA, and the two EDI subscales were more extensive, they are potentially more problematic. However, reliabilities of the translated scales were comparable to the reliabilities of the original versions. This suggests that the translations were of good quality.

The most serious limitation of the present study is that neither sample can be assumed to be representative of college women in their respective countries. In addition, samples of college women are certainly not representative of all women in their societies, and that problem is not limited to the present study. Much to the contrary, that limitation is shared by nearly all available cross-cultural studies of body dissatisfaction (Nasser, 1997). Interest in the cross-cultural study of body dissatisfaction and disordered eating is a relatively recent development and most of the available research is exploratory or descriptive in nature. Under such circumstances, the widespread use of nonrepresentative samples is not surprising. Nevertheless, the use of these samples is problematic. Until comprehensive cross-cultural studies with representative samples are available, the results of nearly all available cross-cultural

studies, including the present one, need to be considered as exploratory and tentative and interpreted accordingly. Even with this limitation, the results of the present study, like many others, strongly suggest: (1) there are important cross-cultural differences in body dissatisfaction, and (2) these differences reflect complex interactions among culture specific features, exposure to Western media, and, perhaps most important, the nature and speed of changing social, economic, and political roles for women.

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