

# The Reliability and Validity of the Korean version of the Body Shape Questionnaire

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## ABSTRACT

**Objective :** There is an increasing number of people are not satisfied with their appearance and shape. Therefore, assessment tools are needed to evaluate the appearance or body shape. This study investigated the reliability and validity of a Korean version of the Body Shape Questionnaire (BSQ).

**Methods :** Participants completed the BSQ, Body Dysmorphic Disorder Examination-Self Report, Eating Disorder Inventory-2, Beck Depression Inventory, Self-Esteem Scale, State-Trait Anger Expression Inventory, and State-Trait Anxiety Inventory.

**Results :** The Korean version of BSQ presented satisfactory test-retest reliability, internal consistency and validity. Exploratory factor analysis yielded four factors as follow: feeling fat, shame and inferiority about one's body shape, attitudes concerning body image perception, and purging behavior.

**Conclusion :** These results show the Korean BSQ exhibits good psychometric properties and can accurately evaluate the body shape concerns among Korean adults. (Anxiety and Mood 2018;14(1):36-43)

**KEY WORDS :** Body dissatisfaction · Body shape questionnaire · Korean version · Reliability · Validity.

## Introduction

Due to the increasing prevalence of images of slimness within the mass media as the standard of beauty and the excessive importance placed on appearance in contemporary society, people idolize slim bodies. As a result, many people are dissatisfied with their body image and expend excessive effort toward maintaining a particular body shape.<sup>1</sup> These extreme concerns regarding body image and shape have been recognized as a common core characteristic among eating disorder and body dysmorphic disorders.<sup>2</sup> The concept of a body image is complex and includes two conceptually different concerns, body shape, and the overestimation of body size.

Although few studies have examined worries concerning body shape, a recent increased interest in body dissatisfaction has encouraged more research on this topic and the use of

more objective methods of assessment. A representative assessment that can be used as a self-report measure is the Body Shape Questionnaire (BSQ).<sup>3</sup> It was designed to measure the level of body shape satisfaction in terms of the individual participant's experiences of feeling fat. Dissatisfaction with body shape is related to not only actual physical factors but also psychological distress.<sup>4</sup> In particular, those with eating disorders reportedly exhibit high levels of depression and anger, low levels of self-esteem, and a high prevalence of anxiety disorders.<sup>5-8</sup>

The BSQ is a widely used tool for research on eating disorders, as its reliability and validity have been verified not only in the United States,<sup>9</sup> but also in other countries, including Spain,<sup>10</sup> Germany,<sup>11</sup> Sweden,<sup>12</sup> France,<sup>13</sup> Brazil,<sup>14</sup> and Turkey.<sup>15</sup>

Awareness and assessment of body shape can vary across countries and cultures. Recently, Koreans have become taller, their face has become smaller, and their trunk has become more obese, due to changes in diet and exercise habits.<sup>16</sup> Accordingly, the recognition and evaluation of body shape can be different from the past. It has also been shown that severe dissatisfaction with one's body shape constitutes a risk factor for the later development of an eating disorder.<sup>17</sup> However, an assessment tool for body shape has not been developed for

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Koreans. Therefore, the authors translated the BSQ into Korean and performed this study to determine the reliability and validity of the Korean version of the BSQ.

## Methods

### Participants

This study was conducted on normal individuals who resided in Daejeon, Korea. Participants were recruited through the internet of Chungnam National University Hospital (CNUH) was used to conduct interviews to screen for mental illness; and physically healthy adults were selected. Participants were provided with adequate information about their participation in the study and gave informed consent voluntarily prior to completing the questionnaires. This study was approved by the Investigation Review Board (IRB) of CNUH (IRB No. 1107-117).

### Procedure

The authors obtained permission via e-mail from the original author of the BSQ to translate the English version of the BSQ into Korean, and the original text of the BSQ was translated into Korean by 2 specialists and 1 resident of the psychiatry department. The authors responsible for the translation strived to ensure that the translation remained true to the original meaning of the text and reviewed the Korean version after translation to ensure that any parts of the translation that were not entirely satisfactory were corrected. Additionally, the final translated questionnaire was reviewed and compared to the original by personnel who were fluent and competent in both Korean and English via reverse translation.

There were 524 participants in this study. After excluding 57 participants with poor data (e.g., many missing items), 467 participants remained. Retesting to determine the test-retest reliability 2 weeks after the initial administration of the test was performed on 88 randomly selected participants. Data analyses were conducted for 81 of these participants; 7 participants who did not complete the questionnaire were excluded.

### Measures

#### Body Shape Questionnaire

Body Shape Questionnaire (BSQ)<sup>3</sup> was developed to identify the degree of concern regarding weight and body shape. It comprises 34 questions that describe situations that may arise from negative emotions induced by holding perceptions

of one's current weight that are distorted due to 'feeling fat' or desiring an ideal weight. All items are rated on a 6-point scale in the following manner: 1="Not at all," 2="Rarely," 3="Sometimes," 4="Mostly," 5="Quite Often," and 6="Always." Higher scores indicate overall dissatisfaction with body shape and reflect a greater interest in their own bodies and increases in the frequency of 'feeling fat.'

#### Body Dysmorphic Disorder Examination-Self Report

Body Dysmorphic Disorder Examination-Self Report (BDDE-SR)<sup>18</sup> is a 30-item self-report questionnaire assess to the body parts that the participants have been dissatisfied with within the past month. Each question (with the exceptions of questions 16a and b, which are answered "yes" or "no") is answered on a 6-point Likert scale. The total score ranges from 0 to 168. Higher scores reflect more severe symptoms. The Korean version of the BDDE-SR was tested by in adolescent,<sup>19</sup> and college students.<sup>20</sup>

#### Eating Disorder Inventory-2

Eating Disorder Inventory-2 (EDI-2)<sup>21</sup> was developed to assess the behaviors and attitudes associated with anorexia nervosa and bulimia nervosa. This study used the Korean version of the EDI-2.<sup>22</sup> It included 23 questions including 7 questions from the drive for thinness scale, 9 questions from the body dissatisfaction scale, and 7 questions from the bulimia scale. Of these scales, only the body dissatisfaction scale was used to determine the validity of the BSQ in this study.

#### Beck depression inventory

Beck Depression Inventory (BDI)<sup>23</sup> was developed to measure the severity of depressive symptoms, and it is a reliable tool with satisfactory validity. This study used the Korean version of the BDI.<sup>24</sup>

#### Self-Esteem Scale

Self-Esteem Scale (SES)<sup>25</sup> is a test that measures the self-esteem of an individual, i.e., their self-respect and self-approval. It consists of 10 questions, 5 of which are related to positive self-esteem and 5 of which are related to negative self-esteem. Negative self-esteem items are scored negatively. Scores range from 10 to 40 points, and higher scores reflect higher levels of self-esteem. This study used the Korean version of SES.<sup>26</sup>

#### State-Trait Anger Expression Inventory

State-Trait Anger Expression Inventory (STAXI)<sup>27</sup> is a self-

report questionnaire that consists of 44 items, and the scale is classified into several sub-items: state anger, trait anger, anger in, anger out, and anger control. In this study, a Korean version of STAXI<sup>28</sup> was used.

**State-Trait Anxiety Inventory**

State-Trait Anxiety Inventory (STAI)<sup>29</sup> was developed to create a simplified, objective self-report scale that could measure both state anxiety and trait anxiety. This scale consists of a total of 40 questions: 20 questions that measure state anxiety (X-1 Type) and 20 questions that measure trait anxiety (X-2 Type). In this study, a Korean version of STAI<sup>30</sup> was used.

**Statistical analysis**

Inter-item test-retest Spearman coefficients and the Pearson correlation coefficient of the total scores were examined to verify the reliability of the BSQ. For internal consistency, Cronbach’s  $\alpha$  and Guttman’s split-half coefficient were obtained for the entire sample. To verify the validity, Pearson correlation coefficients were analyzed between the BSQ, BDDE-SR and body dissatisfaction subscale of the EDI-2. Additionally, to identify the relationships between body shape satisfaction and depression, self-esteem, anger and anxiety, the correlations between the BSQ and BDI, SES, STAXI, and STAI were also calculated. For factor analysis, authors carried out a principle component analysis and then performed an exploratory factor analysis with varimax rotation. Statistical analyses were conducted using SPSS 17.0 for window (SPSS Inc., Chicago, IL USA), and statistical significance was deter-

mined at the  $p < 0.05$  level.

**Results**

**Socio-demographic characteristics of the participants**

There were 467 participants, including 96 men and 371 women. Of the total participants, twenties were most common (57.6%). The mean age of the sample was 27.4 ( $\pm 8.8$ ; 17–57) years old. The mean age of the men was 26.8 ( $\pm 3.9$ ; 18–36) years old, and the mean age of the women was 27.6 ( $\pm 9.7$ ; 17–57) years old. Unmarried individuals reflected 90.6% and 78.4% of the male and female samples, respectively. Most of the men in the sample had graduated from university (65.6%), whereas the women in the sample were largely university students (42.0%). The mean height and weight of the men were 174.5 cm and 71.1 kg, respectively, and the mean BMI of the men was 23.3 kg/m<sup>2</sup>. The mean height and weight of the women were 161.4 cm and 53.5 kg, respectively, and the mean BMI of the women was 20.6 kg/m<sup>2</sup>. The BMIs were significantly different between men and women ( $p < 0.001$ ). The mean BSQ score for the men (67.5  $\pm$  26.8) was less than that of the women (89.0  $\pm$  33.3), and this difference was significant (Table 1).

**Reliability**

The Pearson correlation coefficient of the test and retest total scores was 0.93 ( $p < 0.001$ ), suggesting satisfactory reliability. Additionally, the test-retest reliabilities for each question, as determined using Spearman coefficients, ranged from 0.72–0.93, and all relationships showed significant cor-

**Table 1.** Sociodemographic characteristics of the participants

	Male No(%)	Female No(%)	Total No(%)	p value
Number of participants	96 (20.6)	371 (79.4)	467 (100)	
Age (year) : mean (SD)	26.8 (3.9)	27.6 (9.7)	27.4 (8.8)	
Marital status				0.399*
Married	9 (9.4)	80 (21.6)	89 (19.1)	
Single	87 (90.6)	291 (78.4)	378 (80.9)	
Education				<0.001 <sup>†</sup>
High school graduate	5 (5.2)	15 (4.0)	20 (4.3)	
In college	26 (27.1)	156 (42.0)	182 (39.0)	
College graduate	63 (65.6)	148 (39.9)	211 (45.2)	
In graduate school	0 (0.0)	5 (1.3)	5 (1.1)	
Graduate school graduate	2 (2.1)	47 (12.7)	49 (10.5)	
Height (cm) : mean (SD)	174.5 (5.1)	161.4 (5.0)	164.1 (7.3)	<0.001 <sup>†</sup>
Weight (kg) : mean (SD)	71.1 (10.1)	53.5 (6.9)	57.1 (10.5)	<0.001 <sup>†</sup>
BMI (kg/m <sup>2</sup> ) : mean (SD)	23.3 (2.9)	20.6 (2.5)	21.1 (2.8)	<0.001 <sup>†</sup>
BSQ : mean (SD)	67.5 (26.8)	89.0 (33.3)	84.6 (33.2)	<0.001 <sup>†</sup>

\* :  $\chi^2$ -test, <sup>†</sup> : Fisher-test, <sup>‡</sup> : Independent t-test

relations ( $p < 0.001$ ). Regarding the item-total correlations, all items showed significant correlations. Cronbach's  $\alpha$ , which was calculated across the entire sample of participants to determine the internal consistency of the BSQ was 0.97. Guttman's split-half reliability was also 0.94.

### Validity

The correlation between the BSQ and BMI was 0.21 ( $p < 0.001$ ). The correlations between the BSQ and the BDDE-SR and body dissatisfaction subscale of the EDI-2 were determined using Pearson correlation coefficients and were significantly high, yielding values of 0.69 and 0.66, respectively. The correlation coefficients were significant at the  $p$ -level of 0.001.

Correlation analyses of the BSQ and the BDI, SES, STAXI, and STAI were performed to identify the relationships between body shape satisfaction and depression, self-esteem, anger, and anxiety. The Pearson correlation coefficient between the BSQ and BDI was 0.28, indicating a positive correlation. However, the Pearson correlation coefficient between the BSQ and SES was  $-0.29$ , indicating a negative correlation. Regarding the BSQ and the STAXI, a significant positive correlation was found for trait anger ( $r = 0.18$ ), but the correlation with state anger was not significant ( $r = 0.07$ ,  $p = 0.15$ ). The correlation coefficient for anger expression was 0.18, indicating a positive correlation, and the correlation coefficients of the subscale items of the BSQ were positive for anger in ( $r = 0.28$ ) and anger out ( $r = 0.16$ ) and negative for anger control ( $r = -0.14$ ). The correlation coefficients between the BSQ and the sub-items of the STAI anxiety scale were 0.24 and 0.30 for state anxiety and trait anxiety, respectively. All correlation coefficients were significant at the 0.01 level (Table 2).

### Factor analysis

Exploratory factor analysis was performed to identify the factor structure of the BSQ. The principle component extraction method identified 4 factors with eigenvalues greater than 1. These 4 factors accounted for 61.92% of the total variance. When the loadings for each factor were studied in detail, the eigenvalue of factor 1 was 16.41; this factor accounted for 48.25% of the total variance and consisted of 15 items (4, 6, 17, 2, 11, 21, 10, 22, 9, 34, 3, 30, 1, 5, 16). This factor was called "dissatisfaction about feeling fat." The eigenvalue of factor 2 was 2.17. It accounted for 6.39% of the total variance and comprised 11 items (20, 15, 19, 29, 31, 24, 14, 33, 23, 12, 28). This factor was called "shame and inferiority about body

**Table 2.** Correlations between scores for the BSQ and BMI, BDDE-SR, body dissatisfaction subscale of the EDI-2, BDI, SES, STAXI, and STAI

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
BSQ	1													
BMI	0.205 <sup>†</sup>	1												
BDDE-SR	0.685 <sup>†</sup>	0.052	1											
EDI-2- BD	0.655 <sup>†</sup>	0.157 <sup>†</sup>	0.540 <sup>†</sup>	1										
BDI	0.277 <sup>†</sup>	-0.018	0.428 <sup>†</sup>	0.313 <sup>†</sup>	1									
SES	-0.292 <sup>†</sup>	0.032	-0.452 <sup>†</sup>	-0.371 <sup>†</sup>	-0.679 <sup>†</sup>	1								
Trait Anger	0.180 <sup>†</sup>	0.041	0.172 <sup>†</sup>	0.113 <sup>*</sup>	0.268 <sup>†</sup>	-0.190 <sup>†</sup>	1							
State Anger	0.066	0.107 <sup>*</sup>	0.123 <sup>†</sup>	-0.024	0.303 <sup>†</sup>	-0.176 <sup>†</sup>	0.408 <sup>†</sup>	1						
Anger expression	0.179 <sup>†</sup>	0.065	0.192 <sup>†</sup>	0.148 <sup>†</sup>	0.110	-0.068	-0.085	-0.151 <sup>†</sup>	1					
Anger In	0.283 <sup>†</sup>	-0.005	0.340 <sup>†</sup>	0.281 <sup>†</sup>	0.317 <sup>†</sup>	-0.310 <sup>†</sup>	0.214 <sup>†</sup>	0.027	0.699 <sup>†</sup>	1				
Anger Out	0.164 <sup>†</sup>	0.081	0.107 <sup>*</sup>	0.146 <sup>†</sup>	0.032 <sup>*</sup>	-0.018	-0.038	-0.199 <sup>†</sup>	0.710 <sup>†</sup>	0.250 <sup>†</sup>	1			
Anger Control	-0.136 <sup>†</sup>	0.035	-0.089	-0.175 <sup>†</sup>	-0.137 <sup>†</sup>	0.202 <sup>†</sup>	-0.357 <sup>†</sup>	-0.079	0.451 <sup>†</sup>	0.122 <sup>†</sup>	-0.108 <sup>*</sup>	1		
State Anxiety	0.242 <sup>†</sup>	-0.055	0.389 <sup>†</sup>	0.293 <sup>†</sup>	0.667 <sup>†</sup>	-0.633 <sup>†</sup>	0.295 <sup>†</sup>	0.269 <sup>†</sup>	0.062	0.301 <sup>†</sup>	0.041	-0.240 <sup>†</sup>	1	
Trait Anxiety	0.303 <sup>†</sup>	-0.096 <sup>*</sup>	0.445 <sup>†</sup>	0.343 <sup>†</sup>	0.706 <sup>†</sup>	-0.652 <sup>†</sup>	0.332 <sup>†</sup>	0.283 <sup>†</sup>	0.161 <sup>†</sup>	0.414 <sup>†</sup>	0.099 <sup>*</sup>	-0.222 <sup>†</sup>	0.856 <sup>†</sup>	1

\* :  $p < 0.05$ , <sup>†</sup> :  $p < 0.01$ . BSQ : Body Shape Questionnaire, BMI : Body mass index (kg/m<sup>2</sup>), BDDE-SR : Body Dysmorphic Disorder Examination-Self Report, EDI-2-BD : Eating Disorder Inventory-2 bodydissatisfaction, BDI : Beck Depression Inventory, SES : Self-esteemScale, STAXI : State-Trait Anger Expression Inventory, STAI : State-Trait Anxiety Inventory

Korean version of Body Shape Questionnaire

shape.” The eigenvalue of factor 3 was 1.37. It accounted for 4.02% of the total variance and consisted of 7 items (7, 8, 13, 27, 18, 26, 25). This factor was called “attitudes concerning body image perception.” The eigenvalue of factor 4 was 1.107.

It accounted for 3.26% of the total variance and comprised 1 item (No. 32 : “Have you taken laxatives in order to feel thinner?”). This factor was called “purging behavior.”

**Table 3.** Factor analysis of the Korean version of Body Shape Questionnaire

No.	Item	Factor loading			
		1 Dissatisfaction about “feeling fat”	2 Shame & inferiority about body shape	3 Attitude concerning body image perception	4 Purging behavior
4	살이 찢까봐 걱정하는 적이 있습니까?	0.790			
6	배가 많이 부르면 살찼다는 느낌이 든 적이 있습니까?	0.780			
17	단 음식이나 케익처럼 칼로리가 높은 음식을 먹고 나면 똥똥해진다는 느낌이 든 적이 있습니까?	0.736			
2	몸매 걱정으로 다이어트를 해야만 한다고 느끼니까?	0.714			
11	조금만 먹어도 살찔 것 같다는 느낌이 든 적이 있습니까?	0.691			
21	몸매에 대한 걱정 때문에 다이어트를 한 적이 있습니까?	0.673			
10	앉을 때 허벅지가 펴퍼짐해질까 봐 걱정해 본 적이 있습니까?	0.659			
22	공복상태일 때의 자신의 몸매에 대해 가장 행복한 기분이 됩니까?	0.638			
9	다른 사람과 함께 있을 때 당신의 몸매에 대해 신경을 쓴 적이 있습니까?	0.637			
34	몸매에 대한 염려 때문에 운동을 해야만 한다고 생각합니까?	0.574			
3	내 몸의 다른 부분에 비해 허벅지나 엉덩이가 너무 크다고 생각됩니까?	0.573			
30	지방이 얼마나 있는지 알아보기 위해 몸의 여기저기를 꼬집어 본 적이 있습니까?	0.546			
1	따분할 때 당신의 몸매에 대해 골똘히 생각하게 됩니까?	0.516			
5	물렁살이라서 고민한 적이 있습니까?	0.509			
16	몸에서 살찐 부분을 도려내는 상상을 해본 적이 있습니까?	0.495			
20	자신의 몸매를 부끄럽다고 느낀 적이 있습니까?		0.738		
15	몸매가 드러나는 옷을 입는 것을 꺼려한 적이 있습니까?		0.729		
19	체격이 매우 크고 몸이 두리뭉실하다는 느낌을 받습니까?		0.653		
29	거울이나 쇼윈도에 비친 몸매를 보고 기분이 상한 적이 있습니까?		0.651		
31	사람들이 당신의 몸을 볼 수 있는 상황을 피한 적이 있습니까?		0.642		
24	다른 사람들이 당신의 뱃살을 볼까봐 걱정하는 적이 있습니까?		0.621		
14	목욕할 때처럼 당신의 벗은 모습을 보고 살찼다는 느낌을 받습니까?		0.609		
33	다른 사람과 함께 있을 때 당신의 몸매에 대해 특히 신경이 쓰인 적이 있습니까?		0.599		
23	자제력이 부족해서 몸매가 이렇게 되었다고 생각한 적이 있습니까?		0.596		
12	다른 사람들의 몸매를 의식하고 그들과 비교해서 당신의 몸매가 별로라는 느낌을 받은 적이 있습니까?		0.572		
28	당신의 살이 울퉁불퉁해지는 것에 대해 걱정하는 적이 있습니까?		0.524		
7	몸매 때문에 너무 속상해서 울어본 적이 있습니까?			0.788	
8	살이 출렁거릴까 봐 달리기를 피한 적이 있습니까?			0.671	
13	몸매에 대해 생각하면 하던 일에 집중이 안된 적이 있습니까?			0.632	
27	사람들이 많을 때 당신이 자리를 너무 많이 차지할까봐 걱정하는 적이 있습니까?			0.614	
18	몸매 때문에 속상해서 사회적인 모임에 가지 않은 적이 있습니까?			0.590	
26	당신은 더 날씬하다고 느끼기 위해 구토를 합니까?			0.561	
25	다른 사람이 당신보다 더 날씬한 것이 불공평하다고 생각된 적이 있습니까?			0.546	
32	날씬해지는 느낌을 받기 위해 완하제를 복용한 적이 있습니까?				0.709



## Discussion

We performed analyses to examine the reliability and validity of the Korean version of the BSQ and completed a factor analysis. Women had higher mean scores on the BSQ than men, indicating that women were more dissatisfied with their body shapes than men. This result is consistent with the findings of Di Pietro et al.,<sup>14</sup> who reported that Brazilian women are more dissatisfied with their body shapes than men according to the BSQ in a college student group. The correlation coefficient between the BSQ and BMI indicated that greater BMIs were associated with greater body dissatisfaction; this result is consistent with that reported by Akdemir et al.<sup>15</sup> who studied female high school students.

Regarding the reliability of the Korean version of the BSQ, Cronbach's  $\alpha$  revealed that the internal consistency was high and significant. In addition, Guttman's split half coefficient was also high. The test-retest correlation coefficient suggested a satisfactory level of reliability. These results are similar to those reported by Raich et al.<sup>10</sup> in Spain, Ghaderi and Scott<sup>12</sup> who studied it using three samples: general population, students, and clinical subjects in Sweden, and Di Pietro et al.<sup>14</sup> in Brazil.

To study the concurrent validity of the BSQ, authors analyzed the correlations between the BSQ and the BDDE-SR and the body dissatisfaction subscale of the EDI-2. The correlation coefficients suggested that the Korean version of the BSQ has a high level of concurrent validity. The correlation of Korean version of the BSQ and BDDE-SR was lower than the result of Rosen et al.<sup>9</sup> In addition, the correlation between the BSQ and the body dissatisfaction subscale of the EDI-2 identified by this study is similar to the result reported by Cooper et al.<sup>3</sup> for patients with bulimia nervosa but is lower than the result noted by Ghaderi and Scott.<sup>12</sup>

Correlation analyses of the relationships between body shape satisfaction and depression, self-esteem, anger, and anxiety revealed that body dissatisfaction, depression, anger (the trait anger and anger expression; anger in and anger out), and anxiety (state anxiety, and trait anxiety) were positively correlated. However, there were negative correlations between body shape satisfaction and body dissatisfaction, self-esteem, and anger control. These results indicated that increased dissatisfaction with body shape was accompanied by increased depression and anger levels, as well as failures of the anger expression styles the participants used to suppress or express anger. Additionally, increased levels of body dissatisfaction

were accompanied by increased anxiety levels and decreased self-esteem.

Brytek-Matera<sup>5</sup> completed a study of the psychological predictors of body shape dissatisfaction in female patients with eating disorders. In that study, depression and low self-esteem were major factors that can predict body dissatisfaction. Ozmen et al.<sup>7</sup> studied the effects of weight and body satisfaction on self-esteem and depression and reported that body dissatisfaction is associated with low self-esteem and depression in obese adolescents. Direct comparisons between these studies and our own are difficult because we examined a sample of normal adult participants, and the women and the youths who participated in the forementioned studies differed from our sample in terms of gender, age, and the prevalence of eating disorders.

Swinbourne et al.<sup>8</sup> reported that eating and anxiety disorders exhibit high rates of co-morbidity, and Krug et al.<sup>6</sup> reported that, compared to a control group, women with eating disorders scored higher on the items of the STAXI, with the exception of anger control. The findings of those studies are consistent with the results of this study. Although comparisons are difficult because we did not examine the presence/absence of eating disorders, we can conclude that body dissatisfaction was positively correlated with anxiety and anger.

Four factors were extracted from the factor analysis performed to examine the construct validity of the BSQ. Our results are similar to those of Rousseau et al.<sup>13</sup> and Di Pietro et al.<sup>14</sup> who examined French and Brazilian samples, respectively. As only 3 factors were extracted in a study by Akdemir et al.<sup>15</sup> of a Turkish population and a study by Ghaderi and Scott<sup>12</sup> of a Swedish population, the perception of body shape may differ depending on the country and culture. However, because most of the 34 items of the BSQ were related to the feeling fat factor,<sup>31</sup> a uni-dimensional structure should be considered.<sup>11,12</sup> Specifically, items addressing purging behavior are not included in the 14-item version of the BSQ. This short version of the BSQ yielded a single factor solution that accounted for 67% of the variance. The short version of BSQ is easier to administer and provides a more coherent factor structure.<sup>12</sup> Further studies of the short version of the BSQ in Korea are needed.

The primary limitation of this study is that it did not differentiate patients based whether they presented eating disorders. Therefore, this study cannot be used to compare patients with and without eating disorders. Consequently, a follow-up study should be conducted on a clinical sample.

In conclusion, our study demonstrated that the Korean

version of the BSQ has excellent reliability and validity, and our study supports facilitating the widespread use of this assessment in various clinical settings in Korea.

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□ Appendix □

신체체형만족도검사  
Body Shape Questionnaire

이름 : \_\_\_\_\_ 연령 : \_\_\_\_\_ 세 성별 : 남 / 녀 작성일 : 20 \_\_\_\_\_ 년 \_\_\_\_\_ 월 \_\_\_\_\_ 일

우리는 당신이 지난 4주동안에 당신의 외모에 대해서 어떻게 느꼈는지를 알고자 합니다. 각각의 문항을 읽고 오른쪽에 있는 적절한 숫자에 동그라미를 치세요. 모든 문항에 대답해주세요.

지난 4주 동안에 :

	전혀 그렇지 않다	드물게 그렇다	때때로 그렇다	대개 그렇다	종종 그렇다	항상 그렇다
1. 따분할 때 당신의 몸매에 대해 골뎠히 생각하게 됩니까?	1	2	3	4	5	6
2. 몸매 걱정으로 다이어트를 해야만 한다고 느낍니까?	1	2	3	4	5	6
3. 내 몸의 다른 부분에 비해 허벅지나 엉덩이가 너무 크다고 생각됩니까?	1	2	3	4	5	6
4. 살이 찢까봐 걱정할 적이 있습니까?	1	2	3	4	5	6
5. 물렁살이라서 고민할 적이 있습니까?	1	2	3	4	5	6
6. 배가 많이 부르면 살찐다는 느낌이 든 적이 있습니까?	1	2	3	4	5	6
7. 몸매 때문에 너무 속상해서 울어본 적이 있습니까?	1	2	3	4	5	6
8. 살이 출렁거릴까 봐 달리기를 피한 적이 있습니까?	1	2	3	4	5	6
9. 다른 사람과 함께 있을 때 당신의 몸매에 대해 신경을 쓴 적이 있습니까?	1	2	3	4	5	6
10. 앉을 때 허벅지가 평퍼짐해질까 봐 걱정해 본 적이 있습니까?	1	2	3	4	5	6
11. 조금만 먹어도 살찔 것 같다는 느낌이 든 적이 있습니까?	1	2	3	4	5	6
12. 다른 사람들의 몸매를 의식하고 그들과 비교해서 당신의 몸매가 별로라는 느낌을 받은 적이 있습니까?	1	2	3	4	5	6
13. 몸매에 대해 생각하면 하던 일에 집중이 안 된 적이 있습니까?	1	2	3	4	5	6
14. 목욕할 때처럼 당신의 벗은 모습을 보고 살찐다는 느낌을 받습니까?	1	2	3	4	5	6
15. 몸매가 드러나는 옷을 입을 것을 꺼려한 적이 있습니까?	1	2	3	4	5	6
16. 몸에서 살찐 부분을 도려내는 상상을 해본 적이 있습니까?	1	2	3	4	5	6
17. 단 음식이나 케이크처럼 칼로리가 높은 음식을 먹고 나면 똥똥해진다는 느낌이 든 적이 있습니까?	1	2	3	4	5	6
18. 몸매 때문에 속상해서 사회적인 모임에 가지 않은 적이 있습니까?	1	2	3	4	5	6
19. 체격이 매우 크고 몸이 두리뭉실하다는 느낌을 받습니까?	1	2	3	4	5	6
20. 자신의 몸매를 부끄럽다고 느낀 적이 있습니까?	1	2	3	4	5	6
21. 몸매에 대한 걱정 때문에 다이어트를 한 적이 있습니까?	1	2	3	4	5	6
22. 공복상태일 때의 자신의 몸매에 대해 가장 행복한 기분이 됩니까?	1	2	3	4	5	6
23. 자제력이 부족해서 몸매가 이렇게 되었다고 생각한 적이 있습니까?	1	2	3	4	5	6
24. 다른 사람들이 당신의 뱃살을 볼까봐 걱정할 적이 있습니까?	1	2	3	4	5	6
25. 다른 사람이 당신보다 더 날씬한 것이 불공평하다고 생각된 적이 있습니까?	1	2	3	4	5	6
26. 당신은 더 날씬하다고 느끼기 위해 구토를 합니까?	1	2	3	4	5	6
27. 사람들이 많을 때 당신이 자리를 너무 많이 차지할까봐 걱정할 적이 있습니까?	1	2	3	4	5	6
28. 당신의 살이 울퉁불퉁해지는 것에 대해 걱정할 적이 있습니까?	1	2	3	4	5	6
29. 거울이나 쇼윈도에 비친 몸매를 보고 기분이 상한 적이 있습니까?	1	2	3	4	5	6
30. 지방이 얼마나 있는지 알아보기 위해 몸의 여기저기를 꼬집어 본 적이 있습니까?	1	2	3	4	5	6
31. 사람들이 당신의 몸을 볼 수 있는 상황을 피한 적이 있습니까?	1	2	3	4	5	6
32. 날씬해지는 느낌을 받기 위해 완하제를 복용한 적이 있습니까?	1	2	3	4	5	6
33. 다른 사람과 함께 있을 때 당신의 몸매에 대해 특히 신경이 쓰인 적이 있습니까?	1	2	3	4	5	6
34. 몸매에 대한 염려 때문에 운동을 해야만 한다고 생각합니까?	1	2	3	4	5	6

평가자 기록란 : 총점 \_\_\_\_\_ 평가 \_\_\_\_\_