

**The mediating effects of body comparison
and body shame between socially prescribed perfectionism
and bulimic symptoms among female college students**

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This study investigated the mechanism of the relation between socially prescribed perfectionism and bulimic symptoms among 272 female college students in South Korea. Specially, it was examined whether body comparison and body shame mediates the impact of socially prescribed perfectionism on bulimic symptoms, using Structural Equation Modeling. The results indicated that both body comparison and body shame mediate the relation between socially prescribed perfectionism and bulimic symptoms. There were two paths identified. One path showed that socially prescribed perfectionism increases body shame which, in turn, leads to increases in bulimic symptoms. The other path indicated that body comparison mediates the relation between socially prescribed perfectionism and body shame, with body shame increasing bulimic symptoms. These findings suggest that the excessive desire for social recognition and status cause bulimic symptoms through body comparison and body shame in females.

Key words : bulimic symptoms, perfectionism, body shame, body comparison

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During young adulthood, individuals experience many changes and stresses that often lead to increased risks for psychological problems (Striegel-Moore, Silberstein, Frensch, & Rodin, 1989). One of the common problems found in college students is pathological eating behaviors; bulimia nervosa is the most prevalent eating disorder especially among female college students (Cashel, Cunningham, Landeros, Cokley & Muhammad, 2003). Empirical studies have shown that the onset of eating disorders generally is in late adolescence and early adulthood (Striegel-Moore & Bulik, 2007). Given the fact that pathological eating behaviors such as excessive preoccupation with body weight are prevalent in late adolescence and early adulthood, studies of eating disorders can have significant implications for college counseling. As a matter of fact, Korean college students have been found to be at risk for some of the problematic eating behaviors. In a recent cross-cultural study that examined body mass index(BMI), weight perception, and attempts to lose weight among university students in 22 Western and Asian countries (Wardle, Haase, & Steptoe, 2006), it was revealed that South Korean women showed the highest percentage of body weight control behavior, while they showed the lowest score on BMI. Additionally, the percentage of trying to lose weight was 39% in France scoring the minimum and 77% in South Korea scoring the maximum, whereas in BMI South Korean women showed the minimum

score 19.3, U. S. women showed the maximum score 22.6. Domestic statistics have also indicated that the risk of pathological eating behaviors in South Korea is extremely high and rapidly increasing: According to the Ministry for Health, Welfare and Family Affairs (2001, 2006), the prevalence rate of eating disorders has doubled within the past five years. Within South Koreans, it appears that college students are at higher risk for developing eating disorders. For example, the prevalence rate of bulimia nervosa in South Korea is particularly high among college students in that this group showed 8%, which was about four times as high as adult populations (1~3%) (So, 2009). Despite these findings indicating the high risk of pathological eating behaviors among South Koreans, especially college students, there is a dearth of research focusing on this particular ethnic, cultural group with the majority of eating disorder studies being conducted with Western populations. Therefore, we aimed to examine the characteristics of pathological eating behaviors among South Korean female college students.

Numerous studies have found that perfectionism is one of the most important risk factors for eating disorders. Individuals with eating disorders show higher levels of perfectionism than control groups as well as other clinical samples, including patients experiencing anxiety, alcohol abuse or dependency, and depressive disorders (Bulik et

al., 2003; Castro-Fornieles et al., 2007). In fact, perfectionism can be conceptualized as a personality trait that precipitates and maintains eating disorders (Lilenfeld, Tlafl, Riso, Crosby, & Mitchell, 2006; Stice, 2002).

Furthermore, research has demonstrated cultural differences on perfectionism in that Asians tend to score higher on perfectionism than Whites and African Americans (Castro & Rice, 2003; Chang, 1998). Given that Koreans tend to be perfectionistic and are at high risk of pathological eating behaviors, it is crucial to study the relation between perfectionism and symptoms of eating disorders among Koreans who have higher tendencies of perfectionism relative to Whites and African Americans.

Despite the significance of perfectionism in understanding eating disorders, research on the relation between perfectionism and subtypes of eating disorders has yielded inconsistent findings. While perfectionism has been consistently found to be a risk factor for anorexia nervosa, studies focusing on the symptoms of bulimia nervosa and perfectionism have shown contradictory results (Bardone-Cone, Abramson, Vohs, Heatherton, & Joiner, 2006; Bardone-Cone et al., 2007; Brannan & Petrie, 2008; Fryer et al., 1997; Hewitt, Flett, & Ediger, 1995; Joiner, Heatherton, & Keel, 1997; Kim & Park, 2009; Oh & Jung, 2008; Tylka & Subich, 1999; Vohs, Bardone, Joiner, & Abramson, 1999). As for the latter finding, two plausible explanations are offered. The first explanation relates to

differences in the instruments used to measure perfectionism. Studies using the perfectionism subscale of the Eating Disorders Inventory (EDI; Garner, Olmsted, & Polivy, 1983) produced insignificant results (e.g., Bardone-Cone, 2007; Tylka & Subich, 1999). However, research using the Multi-Dimensional Perfectionism Scale (MPS) consistently showed a significant relation between perfectionism and bulimic symptoms (e.g., Brannan & Petrie, 2008; Hewitt et al., 1995). Differences between the EDI and the MPS lie in the number of items and item content. The EDI subscale consists of only 6 items (3 items for self-oriented perfectionism and 3 items for socially prescribed perfectionism) and may not sufficiently capture the construct. In contrast, the MPS scale comprised of 30 items (15 items for self-oriented perfectionism and 15 items for socially prescribed perfectionism) appears more comprehensive. In addition, while both measures include items for socially prescribed perfectionism, the item content differs in that the EDI subscale assesses family influences and the MPS assesses general expectations from people. The EDI subscale's limited scope makes this instrument less ideal for measuring socially prescribed perfectionism of young adults who are influenced by peers, others, and mass media other than families (Bardone-Cone, 2007).

The second plausible explanation for inconsistent findings centers on whether perfectionism directly or indirectly influences bulimic symptoms (Bardone-Cone et al., 2007).

The majority of studies has examined only the direct effect of perfectionism on bulimic symptoms and revealed inconsistent findings (e.g., Fryer et al., 1997; Joiner et al., 1997). However, studies investigating moderators, though few in number, have consistently shown that perfectionism significantly affects bulimic symptoms in indirect manners. For example, body dissatisfaction, perceived weight status, self-esteem and self-efficacy have been found to moderate the influence of perfectionism on bulimic symptoms (Bardone-Cone et al., 2006; Brannan & Petrie, 2008; Vohs et al., 1999). Similar results have been found in Korean studies: Impulsivity (Kim & Park, 2005) and emotion regulation styles (Oh & Jung, 2008) moderate the relation between perfectionism and bulimic symptoms.

Along with these results, Bardone-Cone et al.(2007) argued that future research needs to investigate the mechanism through which perfectionism affects eating disorders using moderators and mediators. Previous studies of moderating effects offered information on the conditions under which perfectionism influences eating behaviors. Consequently, Sherry and Hall (2009) stressed the importance of studying mediating models which can address the mechanism through which perfectionism leads to problematic eating behaviors.

In sum, it is important to use a comprehensive measure for assessing perfectionism (e.g., the MPS) and to examine mediators that

can explain why perfectionism leads to bulimic symptoms. The present study was intended to examine whether body comparison and body shame mediate the relation between perfectionism and bulimic symptoms using the MPS. The following sections present prior research and a rationale for our research questions.

Bulimic symptoms and socially prescribed perfectionism

Bulimic nervosa differs from anorexia nervosa in terms of the subtype of perfectionism. While self-oriented perfectionism moderates the relation between body dissatisfaction and anorexic symptoms, socially prescribed perfectionism moderates the relation between body dissatisfaction and bulimic symptoms (Brannan & Petrie, 2008). Additionally, a study conducted in Korea found that impulsivity moderates the relation between socially prescribed perfectionism and bulimic symptoms (Kim & Park, 2009). Given these, it seems that bulimic symptoms are closely related to socially prescribed perfectionism among perfectionism subscales. In other words, individuals with anorexic symptoms tend to establish extremely high standards for physical appearance and criticize themselves for not achieving them. On the other hand, individuals with bulimic symptoms are likely to believe that others (e.g., parents, peer, and mass media) demand exceedingly high standards for physical appearance and make efforts to diet in order to

acquire recognition and attention from others.

Then what is the mechanism through which socially prescribed perfectionism influences bulimic symptoms? Since there has been no study on mediators, we used Barndone-Cone et al. (2007) as a basis for generating hypotheses about mediating variables. According to Barndone-Cone et al., individuals with eating disorders present maladaptive perfectionism in that they are overly sensitive to expectations from others to obtain social recognition. Since individuals with this orientation rely on external, objective standards for their self-worth, they tend to compare themselves to others in body weight and thus may develop eating disorders. In fact, empirical studies have shown that socially prescribed perfectionism is significantly related to body comparisons (Schutz, Paxton, & Wertheim, 2002; Wyatt & Gilbert, 1998) and that body comparisons are significantly associated with symptoms of eating disorders (Corning, Krumm, & Smitham, 2006).

Although socially prescribed perfectionism causes individuals with eating disorders to diet and compare their physical appearance to that of others in order to gain social recognition and attention, they often fail to control their appetite and engage in binge eating. This causes them body shame, leading to the pattern of bingeing and purging (Brannan & Petrie, 2008). As a matter fact, previous studies have found that body shame is correlated with socially prescribed perfectionism (Wyatt & Gilbert, 1998), body

comparison predicts body shame (Markham, Thompson, & Bowling, 2005), and body shame is related to bulimic symptoms (Moradi, Dirks, & Matteson, 2005).

Based on Barndone-Cone et al. (2007) and prior studies, this study was aimed to investigate whether body comparison and body shame mediate the relation between socially prescribed perfectionism and bulimic symptoms.

Mediating roles of body comparison and body shame

Persons high on socially prescribed perfectionism are likely to be sensitive to others' feedback, especially negative one in nature (Flett, Hewitt, & De Rosa, 1996). Their oversensitivity to evaluations from others makes them conform to social standards. When it comes to physical appearance, they frequently engage in body comparisons in daily life (Schutz et al., 2002; Wyatt & Gilbert, 1998). It appears that maladaptive, socially prescribed perfectionism leads to a lack of self-confidence and increases comparisons with others as a way of gaining self-validation through the external objective standard (Barndone-Cone et al., 2007). In the context of eating disorders and social comparison, it has been found that females with eating disorders tend to make self-defeating body comparisons, comparing themselves to other thinner females (Corning, Krumm, & Smitham, 2006).

Individuals with high socially prescribed perfectionism also experience high levels of body shame as a result of their negative self-evaluation based on the perception that they do not reach the perceived social standard from others (Kaufman, 1996). Shame is a negative emotion caused by consciousness of guilt, shortcoming, or social inadequacy (Tangney, 1995). In a previous study, it was found that shame was positively correlated only with socially prescribed perfectionism, not self-oriented perfectionism (Wyatt & Gilbert, 1998). Generally, prior studies have examined shame as a general concept in relation to socially prescribed perfectionism. Although research has examined shame as a general concept in relation to perfectionism, there is no empirical research focusing on the relation between a specific type of shame, body shame and perfectionism. Therefore, this study was intended to examine whether socially prescribed perfectionism influences body shame directly or indirectly through other mediating variables.

In addition to socially prescribed perfectionism, body comparison is also related to body shame. When people compare themselves to others whom they view as superior, they experience feelings of inferiority, frustration, and eventually shame (Kaufman, 1996). In research examining body comparison in individuals with eating disorders, it was found that female college students who compared their body image to the thin-idealized body image are more likely to be

negative about their own physical attractiveness (Irving, 1990) and to show increases in body shame and body dissatisfaction (Markham, Thompson, & Bowling, 2005; Stormer & Thompson, 1996; Tiggemann, & McGill, 2004). Lastly, many prior studies reported that body shame is predictive of eating disorders (e.g., Fredrickson, Roberts, Noll, Quinn & Twenge, 1998; Moradi, Dirks, & Matteson, 2005; Noll & Fredrickson, 1998; Tiggemann & Slater, 2001).

In summary, because individuals high on socially prescribed perfectionism are oversensitive to expectations and evaluations from others, they tend to compare themselves to others they perceive as being socially superior. In the context of eating disorders, maladaptive perfectionism causes an individual to engage in recurrent body comparison, which can result in the feelings of inferiority and body shame about his or her imperfect physical appearance. Therefore, excessive body shame can eventually lead to unhealthy eating behaviors.

Hypotheses of this study

We established a partially mediated model as a hypothesized model and a fully mediated model as a competing model, as illustrated in Figures 1 and 2, respectively. The specific hypotheses of this study were as follows: (a) body comparison would mediate the relation between socially prescribed perfectionism and body shame; (b) body shame would mediate the

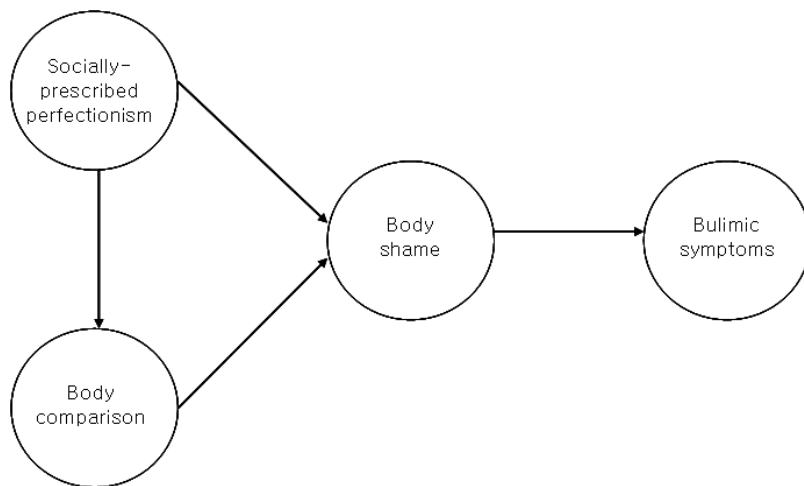


Figure 1. The hypothesized mediated model

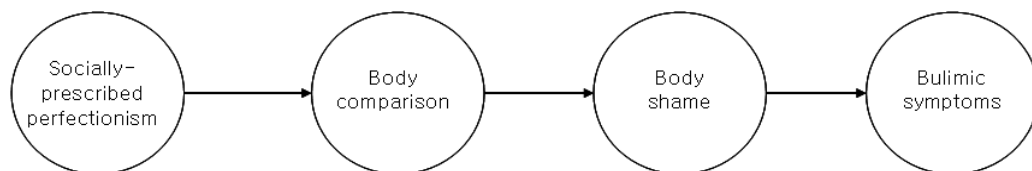


Figure 2. The competing mediated model

relation between socially prescribed perfectionism and bulimic symptoms; and (c) body shame would mediate the relation between body comparison and bulimic symptoms.

Method

Participants

Participants were female college students attending undergraduate psychology courses at two different universities in South Korea. After the purpose of the current study was explained,

the students signed the informed consent form and received a set of questionnaires including demographic questions (e.g., age, height, weight) and four instruments. The questionnaires were counterbalanced. Monetary compensation was provided for their participation. Among 282 students who completed the survey, 10 participants were excluded from the analyses due to their random responses (7 cases) or being outliers (3 cases). After the exclusion, final analyses were run using 272 students.

The ages of the participants ranged from 17 to 30 years, with a mean of 20.12 ($SD = 1.72$). Their heights ranged from 150 to 173

centimeters ($M = 161.91$, $SD = 4.56$), and their weights ranged from 40 to 85 kilograms ($M = 52.07$, $SD = 6.23$).

Measures

Socially prescribed Perfectionism

We used the 15-item subscale of the Socially Prescribed Perfectionism of Multidimensional Perfectionism Scale (SPP-MPS; Hewitt & Flett, 1991) to measure socially prescribed perfectionism. Participants were asked to rate their responses on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating stronger perfectionism. Hewitt and Flett reported an internal consistency of .87 for the SSP-MPS. For the present study, the Cronbach's alpha coefficient of this scale was .84.

Body Comparison

Two scales were used to measure body comparison: The Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff, 1991) and the Specific Attributes Comparison Scale (SACS; Tiggemann & McGill, 2004). Both the PACS and SACS consist of 5 items and use 5-point Likert scales from 1 (never) to 5 (always), with higher scores indicating stronger body comparison. The PACS has an internal consistency of .78 (Thompson et al., 1991) and of .76 for the present study. Similarly, the SACS has an internal consistency of .81 (Tiggemann & McGill, 2004) and of .81 using the current sample.

Body Shame

We used the 8-item subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) to measure body shame. Participants were asked to rate their responses on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Higher scores reflect stronger body shame. McKinley and Hyde reported a test-retest reliability of .84 for the OBCS. For the present study, the Cronbach's alpha coefficient of this subscale was .80.

Bulimic Symptoms

The Bulimia Test-Revised (BULIT-R; Thelen, Farmer, Wonderlich, & Smith, 1991) was used for assessing bulimic symptoms. This 28-item scale was validated for individuals with bulimic symptoms as determined by the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) (Thelen, Mintz & Wall, 1996). The BULIT-R employs a 5-point scale from 1 (absence of disturbance) to 7 (severe disturbance), with higher scores indicating more bulimic symptoms. Thelen et al. (1996) reported an excellent internal consistency of .95. Similarly, the Cronbach's alpha coefficient of this scale in this study was .91.

Data Analyses

We checked the normality of the data by examining skewness and kurtosis of all the variables. The skewness ranged from -.22 to

1.13, and kurtosis ranged from -.74 to 1.29. According to Curran, West and Finch(1996), skewness greater than |2.0| and kurtosis greater than |7.0| indicate significant problems due to violation of normality assumption. Given these criteria, neither skewness nor kurtosis indicated significant non-normality of the variables. Additionally, Mahalanobis distances among the variables were calculated to detect multivariate outliers (Tabachnick & Fidell, 2001). Three cases were found to be outliers (Mahalanobis distances > 41.89) and were excluded from subsequent analyses.

Initially, Pearson correlation coefficients were used to examine the patterns of bivariate relations among all variables of interest. We used structural equation modeling (SEM) to investigate the mediating role of body comparison and body shame in the relation between socially prescribed perfectionism and bulimic symptoms. Anderson and Gerbing's two-step procedure (1988) was used to test the mediating role of body comparison and body shame. We compared our hypothesized, partially mediated model with the competing, fully mediated model to select the best fitting model following the guidelines put forth by Holmbeck (1997). To estimate parameters, the maximum likelihood method was used. For each of the four latent variables, we created four parcels of observed variables. For example, for socially prescribed perfectionism, 15 items of the SPP-MPS were divided into four parcels (items

#1-4 for socially prescribed perfectionism 1, items #5-8 for socially prescribed perfectionism 2, items #9-12 for socially prescribed perfectionism 3, and items #13-15 for socially prescribed perfectionism 4) (see Table 2). Mean values of items belonging to each of the parcels was calculated and used as an indicators for a hypothesized factor.

Because a chi-square test is sensitive to sample size, we used four other indexes were employed to assess the goodness of fit of the models. Following the recommendations of Bentler and Bonett (1988), Hu and Bentler (1999), and Martens (2005), we used the normed fit index (NFI: equal to or greater than .90), the comparative fit index (CFI; equal to or greater than .95), the Tucker-Lewis Index (TLI; equal to or greater than .95), and the root-mean-square error of approximation (RMSEA; less than .06). For comparing the models, we used those fit indexes and the chi-square difference test. After the best model was determined, we examined both direct and indirect effects among the variables along with the path coefficients. The AMOS 5.0 and SPSS win 18.0 were used for data analyses.

Results

Preliminary Analysis

Table 1 presents the means and standard

Table 1. Means, Standard Deviations, and Correlations

Measures	M	SD	1	2	3	4
Socially prescribed perfectionism	3.79	.79	1.00			
Body comparison	3.25	.67	.15*	1.00		
body shame	3.41	1.14	.32***	.51**	1.00	
bulimic symptoms	2.04	.57	.20**	.34**	.52***	1.00

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

deviations of the overall scores of the four measures, and correlations among these measures. As expected, all the correlations were significant and positive. This indicates that the higher level of each of socially prescribed perfectionism, body comparison, and body shame was significantly related to the higher level of bulimic symptoms.

Tests of Mediating Effects

Measurement model

Confirmatory factor analysis was conducted to test whether the measurement model fits the data without any constraints on the relation among the latent variables of interest. Measurement model without constraints produced an excellent fit to the data [$\chi^2(98)=189.84$, NFI=.92, CFI=.96, TLI=.95, RMSEA=.06, 90% (CI:.05,.07)]. Factor loadings for the latent variables were as follows: .72-.82 for socially prescribed perfectionism, .62-.87 for body comparison, .57-.81 for body shame, and .83-.92 for bulimic symptoms. Table 2 shows all the measured variables significantly loaded on the latent variables (all $p < .001$). Therefore, the

latent variables were measured adequately by the corresponding indicators. These results indicate that the measurement model was acceptable for further test of structural model.

Structural model

We hypothesized that the effect of socially prescribed perfectionism on bulimic symptoms would be partially mediated by body comparison and body shame (see Figure 1). Our hypothesized, partially mediated model showed an excellent fit to the data [$\chi^2(100)=189.92$, NFI=.92, CFI=.96, TLI=.95, RMSEA=.06, 90% (CI:.05,.07)].

Next, we tested an alternative, fully mediated model by removing the direct path from socially prescribed perfectionism to body shame. The result of this fully mediated model indicated an excellent fit to the data [$\chi^2(101)=214.49$, NFI=.91, CFI=.95, TLI=.94, RMSEA=.06, 90% (CI:.05,.08)].

The Satorra-Bentler scaled chi-square difference test (Satorra & Bentler, 2001) was then used to compare the two nested models. The analysis yielded a significant chi-square difference Δ

Table 2. Factor Loadings for the Measurement Model

Measured variable	Unstandardized factor loadings	SE	CR	Standardized factor loadings
Socially prescribed perfection				
Socially prescribed perfection1	1.00			.77***
Socially prescribed perfection2	1.24	.10	12.72	.82***
Socially prescribed perfection3	1.32	.12	11.40	.72***
Socially prescribed perfection4	1.21	.10	11.90	.76***
Body comparison				
Body comparison1	1.00			.62***
Body comparison2	1.05	.13	8.38	.62***
Body comparison3	1.86	.18	10.22	.87***
Body comparison4	1.72	.18	9.56	.75***
Body shame				
Body shame1	1.00			.73***
Body shame2	.99	.08	11.71	.78***
Body shame3	.71	.08	8.69	.57***
Body shame4	1.05	.09	12.07	.81***
Bulimic symptoms				
Bulimic symptoms1	1.00			.83***
Bulimic symptoms2	.89	.05	19.16	.92***
Bulimic symptoms3	.93	.05	17.43	.86***
Bulimic symptoms4	.86	.05	16.81	.84***

Note. CR=Critical Ratio, *** $p < .001$

$\chi^2(1)=24.57, p < .001$] indicating that the partially mediated model, which had more paths than the fully mediated model, explained the data better. In addition, the indexes for the partial model were better than those for the full model. Therefore, we selected the partially mediated model as the best fitting model.

As shown in the partially mediated model, socially prescribed perfectionism influenced body comparison ($\beta=.18, p < .05$), body shame was affected by socially prescribed perfectionism and body comparison ($\beta=.30, p < .001$ and $\beta=.58, p < .001$, respectively), and body shame had an impact on bulimic symptoms ($\beta=.61, p < .001$).

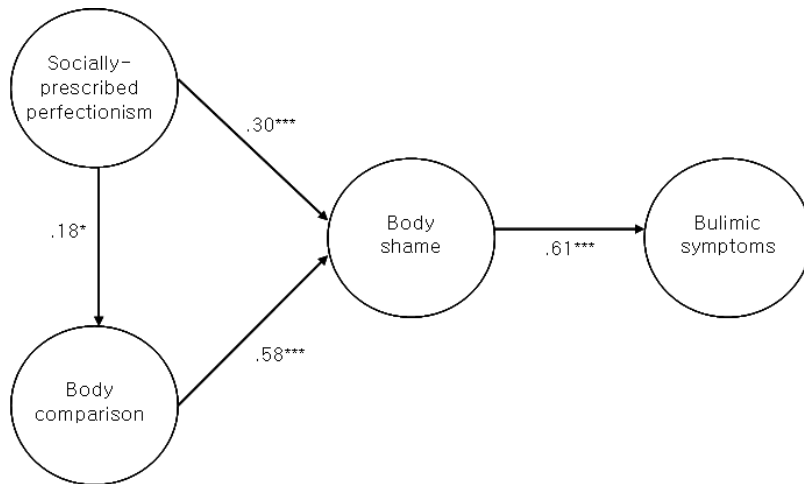


Figure 3. The final, partially mediated model

Note. * $p < .05$, *** $p < .001$

Table 3. Direct and indirect effects of body comparison and body shame as mediators

independent variable	mediating variable	dependent variable	indirect effect	direct effect	total effect
socially prescribed perfectionism	body comparison	body shame	.10 (.10-.18)	.30 (.18-.44)	.40 (.25-.55)
socially prescribed perfectionism	body shame	bulimic symptoms	.25 (.15-.35)	.	.25 (.15-.35)
body comparison	body shame	bulimic symptoms	.36 (.26-.44)	.	.36 (.26-.44)

Note. * $p < .05$

In other words, college women with high socially prescribed perfectionism and recurrent body comparison were more likely to have high body shame which led to more bulimic symptoms.

Regarding the final model, additional analyses were run to examine the direct and indirect influence of body comparison and body shame as

mediators. The bootstrapping method was used for testing the significance of direct and indirect effects (Table 3).

Discussion

Recent statistics and research indicate the

alarming level of risk for pathological eating behaviors among South Koreans (Ministry for Health, Welfare and Family Affairs, 2001, 2006; Wardle et al., 2006). Despite the seriousness of this issue, there is a paucity of research on South Koreans's eating behavior. Given the critical gap in the literature, we aimed to investigate whether dysfunctional perfectionism causes bulimic symptoms among South Korean female college students using SEM. This kind of research is of importance as Asians have a high tendency for perfectionism (Castro & Rice, 2003; Chang, 1998) and Korean female college students are at high risk for pathological eating behaviors. Additionally, we intended to clarify the relation between socially prescribed perfectionism and bulimic symptoms by developing and testing a model in which body comparison and body shame mediate the relation between socially prescribed perfectionism and bulimic symptoms.

Results indicated that, as hypothesized, body comparison mediates the relation between socially prescribed perfectionism and body shame. This is consistent with previous studies showing that socially prescribed perfectionism is correlated with body comparison (Schutz et al., 2002; Wyatt & Gilbert, 1998), and that socially prescribed perfectionism and body comparison are associated with body shame (Heinberg & Thompson, 1995; Irving, 1990; Stormer & Thompson, 1996; Wyatt & Gilbert, 1998). Based on these results, it is posited that individuals high on socially

prescribed perfectionism perceive others as demanding extremely high standards, and are oversensitive to expectations and evaluations from others. Maladaptive perfectionism might make an individual increase body comparisons and seek social recognition as a means of obtaining self-validation. However, such social comparisons tend to result in feelings of inferiority and body shame.

Another important result of the present study is that body shame is a significant mediator between socially prescribed perfectionism and bulimic symptoms, and between body comparison and bulimic symptoms. These results are consistent with prior studies showing that socially prescribed perfectionism is associated with bulimic symptoms (Bardone-Cone et al., 2006; Brannan & Petrie, 2008; Hewitt, Flett, & Ediger, 1995; Vohs et al., 1999) and that body comparison and body shame are related to bulimic symptoms (Coring et al., 2006; Fredrickson et al., 1998; Moradi et al., 2005; Noll & Fredrickson, 1998; Tiggemann & Slater, 2001). Although there have been inconsistent findings regarding the relation between socially prescribed perfectionism and bulimic symptoms (Bardone-Cone et al., 2006; Bardone-Cone et al., 2007; Brannan & Petrie, 2008; Fryer et al., 1997; Hewitt et al., 1995; Joiner et al., 1997; Kim & Park, 2009; Oh & Jung, 2008; Tylka & Subich, 1999; Vohs et al., 1999), this study provides support for socially prescribed perfectionism as a risk factor for bulimic

symptoms by examining a mediating model between the two variables and assessing the perfectionism construct comprehensively.

The finding that the partially mediated model (the hypothesized model) was more appropriate than the fully mediated model (the competing model) suggests that the effect of socially prescribed perfectionism on body shame is both direct and indirect. In addition to the indirect effect through body comparison, it is possible that another variable serves as a mediator between socially prescribed perfectionism and body shame. For example, socially prescribed perfectionism might increase body surveillance (i.e., watching oneself as though one were an observer and feeling anxious about other people's evaluation), which might lead to body shame. Although the literature has documented that body surveillance is correlated with body shame and symptoms of eating disorders (Fredrickson et al., 1998; Moradi et al., 2005; Noll & Fredrickson, 1998; Tiggemann & Slater, 2001), no research has been conducted regarding the relation between socially prescribed perfectionism and body surveillance. Therefore, future research is needed to investigate another possible mediator (e. g. body surveillance) in the link of socially prescribed perfectionism to body shame.

The present study makes important contributions to the literature. First, the results help to understand the mechanism through which perfectionism affects bulimic symptoms. This is an area of research of high priority

which has been rarely addressed in prior investigations. Another contribution of this study makes is that it sheds light on the relation between bulimic symptoms and social sensitivity. More specifically, the mediating model tested in this study helps to clarify that social sensitivity causes bulimic symptoms through excessive body comparison and body shame. In other words, individuals with bulimic symptoms tend to be oversensitive to others' expectations and strive to obtain others' recognition. In this process, they may seek self-validation from external standards which may in turn increase body comparison behavior. Recurrent body comparison might lead to body shame, making them excessively conscious of their weight relative to other people. Finally, shame about their body might cause binge eating and purging behaviors.

The findings of the present study showed the role of Korean culture in causing bulimic symptoms among Koreans. One of the characteristics of Korean culture is social face (chemyon) which regards others' evaluations as very important (Choi & Kim, 2000; Lee & Kim, 2006). In the process of pursuing social recognition, the social face culture could reinforce the tendency of socially prescribed perfectionism, body comparison and body shame which are related to bulimic symptoms. Given this cultural characteristic, the relation among socially prescribed perfectionism, body comparison, and body shame may be stronger among Koreans than in Western populations. It will be

interesting to examine this possibility by using cross-cultural samples in future studies.

Considering the fact that eating disorders generally begins in late adolescence and early adulthood (Striegel-Moore & Bulik, 2007) and that bulimia nervosa is the most prevalent among female college students (Cashel et al., 2003), our findings suggest meaningful implications for counseling with Korean female young adults with bulimic symptoms. First of all, it will be important to design interventions for such individuals that not only reduce their unhealthy eating behaviors but also address their excessive tendency to seek out social recognition and approval. Counselors may help those students to become less sensitive to others' expectations by helping them to find what they think is important themselves and to set and pursue their own goals with patience and persistence. Secondly, this study suggests a potentially effective method for treating individuals with bulimic symptoms. Although perfectionism is a well-known risk factor for bulimic symptoms, it is considered as a personality trait, which is relatively stable over time (Lilenfeld et al., 2006). In fact, research has shown that it takes a considerable amount of time and energy to change perfectionism in the treatment of eating disorders (Johnson, Tobin, & Dennis, 1990; Wonderlich et al., 2007). Hence, instead of targeting change in perfectionism, it might be more effective to reconstruct social comparison, one of the

mediators in the relation between socially prescribed perfectionism and bulimic symptoms.

An information processing paradigm could be applied to social comparison and serves as a potential vehicle for changing social cognition (Corning et al., 2006; Mussweiler, 2003). For example, if a self-defeating comparison is about to happen for an individual with bulimic symptoms, a self-enhancing information processing strategy could be employed to replace the negative social judgment.

We note some limitations of this study and suggestions for future research. First, because the participants of this study were female college students in South Korea, the study findings may not be generalized to other female groups such as teenagers. Also, it will be interesting to examine whether our results are replicable in other Asian countries. Second, in the current study bulimic symptoms were measured only by a self-report questionnaire. Given the possible differences in symptoms between self-report and report from others, it will be desirable to use multiple informants in future studies. Third, the fact that this study used the item parceling method should be taken into account in interpreting the findings. Although it is ideal to use individual items as observed variables in a measurement model, this may result in violating the multivariate normality assumption. Additionally, the item parceling method has some advantages: It reduces the possibility of results being affected by the unique

characteristics of individual items and the number of parameters measured. Finally, the focus of the present study was on bulimic symptoms, and the mechanism found in this study may not be applied to other subtypes of eating disorders. As a matter of fact, evidence shows that the mechanism explaining the relation between perfectionism and pathological eating behaviors might differ depending on subtypes of eating disorders. For individuals with anorexic symptoms, self-oriented perfectionism is associated with the dysfunctional eating behavior (Brannan & Petrie, 2008; Hewitt et al., 1995). Therefore, further research focusing on anorexic symptoms in relation to perfectionism is needed.

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여대생의 사회적으로 부과된 완벽주의와 신경성 폭식증 증상 간에 신체 비교와 신체 수치심의 매개 효과

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본 연구에서는 한국 여자 대학생들을 대상으로 사회적으로 부과된 완벽주의와 신경성 폭식증 증상 간의 관계에 대한 기제를 알아보고자 하였다. 이를 위해 사회적으로 부과된 완벽주의를 측정하는 다차원적인 척도를 사용하였으며, 사회적으로 부과된 완벽주의와 신경성 폭식증 증상 간에 신체 비교와 신체 수치심이 매개 역할을 하는지 살펴보았다. 한국 여자 대학생 272명이 참가하였으며, 구조방정식으로 자료를 분석하였다. 신체 비교와 신체수치심은 사회적으로 부과된 완벽주의와 신경성 폭식증 증상 간을 매개하는 것으로 나타났으며, 사회적으로 부과된 완벽주의가 신경성 폭식증에 영향을 미치는 경로는 두 가지인 것으로 밝혀졌다. 첫 번째 경로에서는 사회적으로 부과된 완벽주의는 신체 수치심을 높이며 신체 수치심은 신경성 폭식 증상을 증가시키는 것으로 나타났다. 두 번째 경로에서는 사회적으로 부과된 완벽주의는 신체 비교에 영향을 미치며 신체 비교는 신체 수치심에 영향을 주고 신체 수치심은 신경성 폭식증 증상에 영향을 미치는 것으로 나타났다. 본 연구 결과는 과도하게 사회적 인정을 받기 위해 행동하는 경향이 어떤 과정을 통해 신경성 폭식증 증상을 유발하는지 그 기제에 대해 설명해주었다.

주요어 : 사회적으로 부과된 완벽주의, 신경성 폭식증 증상, 신체 비교, 신체 수치심