

**The Role of Body Shame,
Social Appearance Anxiety,
and Body Checking Behavior
on Body Dissatisfaction and Disordered Eating Behaviors:
A Cross-Cultural Study in Germany and Korea**

**Inaugural-Dissertation
zur
Erlangung der Doktorwürde
der Wirtschafts- und Verhaltenswissenschaftlichen Fakultät
der Albert-Ludwigs-Universität Freiburg. i. Br.**

**vorgelegt von
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SS 2010

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Datum des Promotionsbeschlusses: 16. 12. 2010

Abstract

This cross-cultural study compared levels of body mass, body shame, body checking behavior, social appearance anxiety, body dissatisfaction and disordered eating behaviors of 350 German college students (266 females and 84 males) with 460 Korean college students (324 females and 136 males). In addition, roles of body shame, social appearance anxiety and body checking behavior were investigated as to how they relate to body dissatisfaction and disordered eating behaviors of German and Korean subjects. Instruments for the examinations were: Body Shape Questionnaire (BSQ), Body Checking Questionnaire (BCQ), Eating Disorder Inventory 2 (EDI-2), Social Appearance Anxiety Scale (SAAS), Body Shame subscale of the Objectified Body Consciousness Scale (OBCS), Body Shame subscale of the Weight- and Body-Related Shame and Guilt Scale (WEB-SG) and Symptom Check List-90 R (SCL-90 R).

German females had significantly higher levels of Body Mass Index (BMI) than Korean females, while the BMI levels of males of both countries were not remarkably different. Korean females and males reported significantly higher levels of body shame, body checking behavior, social appearance anxiety, body dissatisfaction and disordered eating behaviors than German females and males. Variables of body shame, social appearance anxiety, body dissatisfaction, body checking behavior and disordered eating behaviors were positively associated. In particular, body dissatisfaction and disordered eating behaviors showed high correlations between females and males from both countries. In addition, Korean participants reported significantly higher levels on the SCL-90 R than German participants.

Based on the structural equation model testing, body dissatisfaction led to body shame which predicted bulimia symptoms in both German females and Korean females. However, body shame did not predict drive for thinness in either female group. Moreover, the structural pathway from body checking behavior through body dissatisfaction, body shame and social appearance anxiety to bulimia symptoms was only statistically convincing in German females. In the Korean female subjects this same pathway model from body checking behavior to body dissatisfaction, body shame and social appearance anxiety leading to bulimia symptoms was not convincing and

might be due to other interactions. Thus, body shame proved to be a predictor of body dissatisfaction and bulimia symptoms in both female groups, while body checking behavior and social appearance anxiety were shown to play different roles between German women and Korean women in the current study. Body checking behavior and social appearance anxiety may have different meanings or functions in each culture.

The current study was limited by the small sample size of males in both countries; therefore, the structural equation model test could not be examined for male groups. Additionally, the sample consisted of non-clinical college students with self-report measures. Therefore, further studies are needed in order to evaluate the functions of body shame or other factors in males and then compare the clinical samples of Germany and Korea with one another.

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1. Introduction

Eating disorders are some of the most common psychiatric problems and are classified as Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Eating Disorder Not Otherwise Specified (EDNOS) in DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders 4th edition, Text revision, American Psychiatric Association, 2000). AN is characterized by deliberate weight loss, fear of weight gain, disturbed perception of body shape and amenorrhea in women. BN is identified by repeated bouts of overeating, control of body weight and the influence of weight and body shape on self-evaluation. EDNOS refers to eating disorders not meeting criteria for either AN or BN. The diagnostic criteria of eating disorders involve the strong control of weight and disordered eating behaviors in addition to the cognitive and emotional components of them. Furthermore, eating disorders are marked by medical complications, psychosocial impairment and co-morbid psychopathology. For instance, eating pathology increases the risk of the onset of obesity as well as affective disorders such as depression and substance abuse (Stice & Shaw, 2002).

So far, the focus of research on eating disorders was mainly in females in Western cultures. However, it has also been prevalent in non-Western cultures, and it appears not only in females but also in males (Ricciardelli, McCabe, Williams, & Thompson, 2007). For example, in cross-cultural studies in this field, the most recent reports suggest that the incidences of eating disorders are becoming increasingly common, especially among women from non-Western ethnic origins (Lee & Lee, 2000; Shroff & Thompson, 2004; Edman & Yates, 2005; Jennings, Forbes, McDermott, & Hulse, 2006). There are also a growing number of studies that have examined disordered eating pathology of men from different ethnic groups in relation to psychiatric and psychological symptoms and body image, i.e. muscularity concerns in body image and body dissatisfaction (McCabe & Ricciardelli, 2004; Edwards & Launder, 2000; Story, Stevens, Evans, Cornell, Juhaeri, Gittelsohn, Going, Clay, & Murray, 2001). Furthermore, studies have reported different associations among potential risk factors of eating disorders in different ethnic groups (Soh, Touyz, & Surgenor, 2006). Thus, cross-cultural studies consider it to be particularly important to examine and to compare the potential risk factors of the

prevalence of eating disorders and to design specific treatments for sufferers of eating disorders from diverse ethnic groups.

As mentioned above, eating disorders are linked to various psychological and psychiatric symptoms. Consequently, it is difficult to investigate the many factors which lead to the development of eating disorders, to compare them from various ethnic groups and to design therapy programs for eating disorders in diverse groups. There are also contradictory findings and much criticism in respect to cross-cultural research on the risk of developing eating disorders and body image disturbances (Soh et al., 2006). However, there are factors which have been agreed to. Many findings, for example, have suggested that body dissatisfaction is a factor in the development and maintenance of eating pathology (Stice et al., 2002). Therefore, negative affect and the role of body dissatisfaction related to eating pathology have frequently been examined and the results have shown that body dissatisfaction linked to negative affect (e.g., depression, anxiety and shame), disturbed thinking and behavior such as low self-esteem, obsessive thinking, eating pathology, body checking and body avoidance (Sharfran, Fairburn, Robinson, & Lask, 2004; Monro & Huon, 2005).

Body dissatisfaction is symptomatically diverse in cognitive, behavioral, and emotional aspects. According to Stice et al. (2002) body dissatisfaction increases the risk for subsequent eating pathology, and this relationship is mediated by increases in dieting and negative affect. Furthermore, body dissatisfaction is linked to ritualistic checking behavior of body shape and size in eating disorder patients (Reas, Whisenhunt, Netemeyer, & Williamson, 2002). In regard to emotion, researchers have found a relationship between social anxiety and shame in eating disorders (Grabhorn, Stenner, Stangier, & Kaufhold, 2006), as well as between appearance anxiety and shame in a non-clinical group (Monro et al., 2005). In addition, they suggest that with regard to bulimic symptoms, binge eating episodes correlate positively with measures of shame and anxiety (Hausenblas & Mack, 1999; Monro et al., 2005). According to previous studies, shame and anxiety seem likely to play a role in the development of eating pathology, as well as to mediate between body dissatisfaction and disordered eating behaviors.

Unfortunately, there are few findings about body shame or the relationships among body shame, social appearance anxiety, and body checking behavior related to body dissatisfaction in eating disorders and comparative data from diverse ethnic samples. Generally, emotions such as shame and anxiety are sensed stronger and play a more important role in social situations in East Asia than in Western societies (Hong & Woody, 2007). This could be because in collectivistic societies, such as in East Asia, the self is oriented more toward an interdependent aspect, hence self-monitoring and self-criticism are necessary for adjusting one's attitudes to belonging to a particular group or affiliation (Markus & Kitayama, 1991; Hong, et al., 2007). Thereby, the perception or expression of emotions, in particular shame and anxiety, can be shown differently (e.g., Frank, Harvey, & Verдум, 2000). Thus, it is assumed that negative emotions regarding body dissatisfaction and disordered eating behaviors do not interact or mediate the same in Western and non-Western societies. Additionally, it is also possible that the behavioral phenomenology of body checking does not always have the same effects and plays a different role in each individual in a collectivistic society (e.g., Korea) versus in an individualistic society (e.g., Germany). Like an expression of emotion, behavioral expression can be influenced by cultures (Markus et al., 1991). Thus, designing a treatment for body dissatisfaction in eating disorders could be a convenient way to understand the differential role of behavioral and emotional symptom severity (e.g., body checking, body shame and appearance anxiety) in different cultures.

The current cross-cultural study is focused primarily on body-related emotional, behavioral and cognitive aspects. Body dissatisfaction is likely a combination of cognitive, behavioral and emotional components related to the body. Body checking is behavioral, while body shame and social appearance anxiety can be classified as emotions. Thus, the current study was designed to compare components of the affective, behavioral and cognitive phenomenon of the relationship concerning eating disorders from two different ethnic groups. Furthermore, the roles of body checking behavior, body shame, and social appearance anxiety were examined in regard to their effects on disordered eating symptoms and body dissatisfaction of German and Korean subjects in non-clinical groups.

2. Theoretical Background

2.1. Eating Disorders

2.1.1. Prevalence of Eating Disorders

Hudson, Hiripi, Pope and Kessler (2007) studied the prevalence of eating disorders in 2,980 adults of the US in the period from 2001 to 2003. They reported the lifetime prevalence of anorexia nervosa as 0.6 %, of bulimia nervosa as 0.1 %, and of binge eating disorder as 2.8 % for the criteria of the DSM-IV. It was found that the lifetime prevalence of subthreshold binge eating disorder was 1.2 % and is defined as a) binge eating episodes, b) occurring at least twice a week for at least 3 months, and c) not occurring solely during the course of anorexia nervosa, bulimia nervosa, or binge eating disorder, as well as a 4.5 % lifetime prevalence of any binge eating disorder regardless of whether or not the individual simultaneously met the criteria for any of the other three eating disorders or for subthreshold binge eating disorder. Specifically, the prevalences were found to be 0.9 % of anorexia nervosa, 1.5 % of bulimia nervosa, 3.5 % of binge eating disorder, 0.6 % of subthreshold binge eating disorder, and 4.9 % of any binge eating disorder in women, and 0.3 %, 0.5 %, 2.0 %, 1.9 %, and 4.0 % for each form of eating disorder in the male sample (Hudson et al., 2007).

Another recent survey of 1,002 female twins aged 28-39 years old in Australia showed a 1.9 % lifetime prevalence of anorexia nervosa, 2.9 % of bulimia nervosa, 2.9 % of binge eating disorder and 5.3 % of purging disorder unaccompanied by binge eating (Wade, Bergin, Tiggemann, Bulik, & Fairburn, 2006). Research of samples from six European countries including Belgium, France, Germany, Italy, the Netherlands and Spain showed the prevalence rates to be 0.48 % of anorexia nervosa, 0.51 % of bulimia nervosa, 1.12 % of subthreshold binge eating disorder, and 2.15 % of any binge eating disorder from 21,425 participants ages 18 years and older in a survey period from 2001 to 2003 (Preti, De Girolamo, Vilagut, Alonso, De Graaf, Bruffaerts, Demyttenaere,

Pinoto-Meza, Haro, Morosini, & The ESEMeD-WMH Investigators, 2009). Additionally, among adolescents with the average age of 14.9 years in the US, the prevalence of anorexia nervosa, bulimia nervosa, binge eating disorder were 0.04 %, 0.3 %, and 1.9 % in female adolescents, and 0.0%, 0.2 %, and 0.3 % in male adolescents (Ackard, Fulkerson, & Neumark-Sztainer, 2007). Thus, the prevalence rates of eating disorders from diverse samples of various studies showed that binge eating disorder appears to have the highest prevalence rate, with the prevalence of bulimia nervosa being slightly higher than the rate of anorexia nervosa.

2.1.2. Development and Maintenance of Eating Disorders

Eating disorders are investigated in many ways and they have been found to have risk factors and other influential factors that lead to their development and maintenance. Studies on eating disorders using cognitive-behavioral theory or sociocultural theory have also led to the development of therapy programs for anorexia nervosa, bulimia nervosa and binge eating disorders (e.g., Williamson, White, York-Crowe, & Stewart, 2004; Stice, Ng, & Shaw, 2010, Jacobi, Hayward, De Zwann, Kraemer, & Agras, 2004; Fairburn, Cooper, & Shafran, 2003).

For instance, Jacobi et al. (2004) researched risk factors for onset of eating disorders from longitudinal studies and suggested gender, weight concerns, dieting, and negative body image as high risk factors. Furthermore, low social support, psychiatric morbidity, sexual abuse or physical neglect and eating conflicts in childhood were found to be risk factors for the development of eating disorders. In particular, it was reported that pregnancy complications, obsessive compulsive disorder, perfectionism, and negative self-evaluation particularly predict anorexia nervosa. Pregnancy complications, childhood obesity, parental problems, family environment factors such as critical comments on weight by family members, and negative self-evaluation are specific predicted factors for the development of bulimia nervosa (Jacobi et al., 2004). However, there are potentially many other influential factors for the onset of eating disorders. Thus, more research is needed to examine other possible risk factors (e.g., biological

factor) and to determine whether risk factors are specific to different forms of eating disorders (Stice et al., 2010).

According to cognitive-behavioral theory, a core point for the maintenance of bulimia nervosa is a dysfunctional system that involves the evaluation of self-worth, eating, shape, weight and their control with an overvaluation of achieving thinness. This dysfunctional system is influenced strongly by low self-esteem and entails strict dieting and other weight control behavior, followed by binge eating with the interaction of mood intolerance which acts to control behaviors of eating, body shape, and weight (Fairburn et al., 2003). For the maintenance of anorexia nervosa, the cognitive-behavioral theory proposed three mechanisms. The first mechanism is a consequence of the fact that control over eating directly strengthens the person's sense of being in control and thereby their self-worth. The initial successful control of restricting food intake increases over time, and the sense of self-worth that leads to even more dietary restriction. The second mechanism of anorexia nervosa is that the starvation state may be perceived by some people as a loss of control of their ability to not eat which further encourages dietary restriction. The third mechanism is particular to cases seen in Western societies. It is derived from the control over eating with shape and weight being used as indicators of overall self-control and self-worth. In this process the strict monitoring of one's body shape and weight and the avoidance of body checking perpetuates their shape and weight concerns. Consequently, these individuals control their shape and weight more, and maintain their dietary restriction (Fairburn, Shafran, & Cooper, 1999). In addition, this hyper-vigilant body checking increases arousal, self-focused attention and anxiety, which encourages further monitoring of body shape and weight (Fairburn et al., 1999). Recently, body checking behavior has been studied more as to its relationship with disordered eating symptomatology, and it has been shown that it leads to body dissatisfaction and plays an influential role in dietary restraint (e.g., Shafran, Lee, Payne, & Fairburn, 2007; Shafran et al., 2004).

Other views exist of the development and maintenance of eating disorders. For instance, Stice, Nemeroff and Shaw (1996) tested a dual pathway model of the sociocultural theory based on bulimia nervosa symptoms in subclinical bulimics. According to sociocultural theory, sociocultural pressures include internalization of the

thin-ideal in a society such as within a family or peer group and increase disordered eating behaviors. In particular, people who strongly internalize this thin-ideal have a higher risk of developing eating disorders (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). The model by Stice et al. (1996) proposed that ideal body internalization, body mass, and perceived pressure leads to body dissatisfaction which provokes both dietary restraint and negative affect which are final proximal predictors of bulimia symptoms. In this pathway the dietary restraint also contributes to negative affect. Restrained eating and negative affect have also proved to play a mediating role, such as in a cognitive-behavioral theory of anorexia nervosa and also as maintenance factors for the development of binge eating (e.g., Fairburn et al., 1999; Hilbert & Tuschen-Caffier, 2007). Depression is often considered a negative affect in eating disorders. It has been reported that depression shows a high comorbidity rate with disordered eating in adolescents and is a predictor for the increase of binge eating habits. Furthermore, disordered eating symptoms have a reciprocal influence on depression (e.g., Santos, Richards, & Bleckley, 2007; Spoor, Stice, Bekker, Van Strien, Croon, & Van Heck, 2006; Stice et al., 1996). Other negative affects such as anxiety and shame have also been examined, and the results show correlations with disordered eating behaviors. In addition, they have been shown to have an effect on maintenance of disordered eating symptomatology (e.g., Grabhorn, Stenner, Kaufhold, Overbeck, & Stangier, 2005). However, more specific variables, such as body shame or social appearance anxiety, have been less examined in comparison to depression. This, in spite of the fact that some studies have reported that body shame predicts of eating disorder symptoms or that high levels of body shame and social appearance anxiety are observed in disordered eating behaviors (e.g., Monro et al., 2005).

Overall, various risk factors such as eating conflicts in childhood, low self-evaluation or negative body image lead to body dissatisfaction which predicts disordered eating symptomatology, and in this process some factors such as negative emotions play a maintenance role. However, further scientific examinations are needed in order to examine the role of particular behavioral or emotional factors in the relationship of body dissatisfaction and disordered eating symptoms from various groups. Thus, because of the small amount of evidence from empirical research into

other possible influential factors for the development and maintenance of eating disorders, the current study focused specifically on body-related factors of the emotional and behavioral components (body checking, body shame and social appearance anxiety) in relation to body dissatisfaction and eating disorders.

2.1.3. Body Dissatisfaction

Eating disorder patients are often concerned about weight gain or their body shape and are influenced toward a negative self-evaluation of their body with a heightened fear of being fat. This negative body evaluation accompanied by negative affect and a negative body image was named body dissatisfaction. It includes displeasure with one's body parts or one's overall physical attractiveness, as well as a negative self-evaluation of one's body, such as figure, weight, stomach and hips (Cash, Morrow, Hrabosky, & Perry, 2004; Stice et al., 2002).

According to Thompson et al. (1999), body dissatisfaction is rooted in sociocultural pressures to be thin and the attractiveness of the thin-ideal as it is espoused in Western cultures. In other words, internalization of the thin-ideal in current societies plays an important role for the development of body dissatisfaction and negative emotions related to body (Agliata & Tantleff-Dunn, 2004; Groesz, Levin, & Murnen, 2002). For instance, Cahill and Mussap (2007) reported that body dissatisfaction in females was significantly increased after exposure to thin female models. Likewise, body dissatisfaction in males was increased after exposure to muscular male models. These sociocultural sources, such as a thin-ideal, the influence of media, peers or parents have been shown to be risk factors for the development of body dissatisfaction (Heinberg & Thompson, 1995; Neumark-Sztainer, Sherwood, Collier, & Hannan, 2000; Cusumano & Thompson, 1997; Pelletier & Dion, 2007).

In addition, body mass may be one contributing risk factor for the development of body dissatisfaction. For example, Stice and Whitenton (2002) stated that body mass correlates positively with body dissatisfaction and predicts increasing body dissatisfaction. Control of body shape and weight with negative self-evaluation also

increases body dissatisfaction (Fairburn et al., 1999). Additionally, research consistently reported that body dissatisfaction leads to weight loss, dietary restraint, bulimic syndrome (Heywood & McCabe, 2006; Ricciardelli & McCabe, 2001) and predicts binge eating and purging (Stice, Killen, Hayward, & Taylor, 1998). It was also reported that in cases of bulimia nervosa associations in the relationship between body dissatisfaction and bulimic symptoms predicts increased dieting and this dieting predicts the onset of bulimic symptoms. In this process negative affect plays a role as a mediator (Stice et al., 2002). Thus, body dissatisfaction is a central factor for the development of disordered eating behaviors.

Moreover, research into emotions stemming from body dissatisfaction has shown that white adolescent American girls are at higher risk of depression, whereas body dissatisfaction does not predict depression in Black girls (Franko & Striegel-Moore, 2002). In addition, negative affects mediate the relationship between body dissatisfaction and bulimia symptoms in females, while there was no relationship between body dissatisfaction and negative affect in males (Heywood et al., 2006). On the other hand, Ricciardelli et al. (2001) found that negative affect mediated the relationship between body dissatisfaction and bulimia for adolescent boys who wanted to lose weight. However, this result was limited to one adolescent boy group. Thus, mediated function of negative affect on body dissatisfaction in both female and male groups needs to be studied more in future research. Additionally, studies need to be done to examine the relationships between body dissatisfaction and various emotions in eating disorders from diverse ethnic groups as well. Some authors have suggested that future research should compare more diverse ethnic groups including familial and peer, as well as examining cultural and socio-economic variables and how they relate to body dissatisfaction and emotions (e.g., Franko et al., 2002).

Regarding treatment for body dissatisfaction in eating disorders, Garner (2002) argued that although body dissatisfaction is one of the most important variables leading to the development of anorexia nervosa, body image therapy is not included or stressed in many therapy programs for eating disorders. Stice et al. (2002) mentioned that few studies have tested whether body dissatisfaction predicts maintenance of bulimic pathology or the implication of treatment for body dissatisfaction. However, some

researchers developed cognitive-behavioral therapies that have been reported to achieve effective results for patients with eating disorders (Butters & Cash, 1987; Cash & Grant, 1996; Rosen, Cado, Silberg, Srebnik, & Wendt, 1990; Rosen, 1997). These cognitive-behavioral therapies focused on reducing overvaluation of shape and weight, changing body image, changing negative thoughts about one's body and reducing body dissatisfaction (Garner, 2002; Stice et al., 2002). In addition, other researchers developed specific cognitive-behavioral therapy programs which were specifically designed for bulimia nervosa, patients with binge eating and for anorexia nervosa (e.g., Fairburn, Marcus, & Wilson, 1993; Vocks & Legenbauer, 2005). Examinations of cognitive-behavioral therapy for specific forms of eating disorders increased recently and reported positive effects using these therapies (Hilbert & Tuschen-Caffier, 2004; Key, George, Beattie, Stammer, Lacey, & Waller, 2002; Wilson, Fairburn, Agras, Walsh, & Kraemer, 2002). Certainly, the effect of this cognitive-behavioral therapy for various cultural and ethnic groups should be examined in the future because the effect of cognitive-behavioral therapy in non-Western countries is still largely unknown.

In terms of males, body dissatisfaction has not been as deeply investigated as in females, but the limited findings that exist show some different results. Studies of males have examined specific male groups such as athletic, bodybuilder or homosexual males, and these studies have shown that bodybuilders have higher levels of body dissatisfaction than male non-bodybuilders, and homosexual males have more of a desire to be underweight than heterosexual males (e.g., Hallsworth, Wade, & Tiggemann, 2005; Herzog, Newman, & Warshaw, 1991). Recently, McCabe et al. (2004) published a study on body dissatisfaction among males across the lifespan and showed that most young boys have high levels of body satisfaction, adolescent males were divided between those wanting to lose weight and those wanting to gain weight, and adult males had a strong desire to lose weight. However, the study reported difficulties with the use of questionnaires for young, adolescent and adult males in this field. Also mentioned in the report was the need for more suitable measures, different sample groups, more prevalent studies and the investigation into the various influential factors for male body dissatisfaction. Thus, it is difficult to decide whether some male

groups are satisfied with their body or whether there is some tendency in males to suffer from body dissatisfaction.

In addition, the internalized ideal male body was suggested as a risk factor for male body dissatisfaction. For example, Baird and Grieve (2006) concluded that body dissatisfaction in males was mostly experienced through exposure to an idealized body image of men in current media, which is a similar process to the suggested causes for the development of body dissatisfaction in females. In addition, men who strive for an ideal male body form, such as the body form of bodybuilders or male models of magazines, experience more body dissatisfaction (McCabe et al., 2004). In comparison to female body dissatisfaction, it is mentioned that although some males seem to desire a slimmer body, others want more weight or a more muscular body (McCabe et al., 2004). This is a significant difference in body dissatisfaction between males and females, because females usually desire loss of weight and wish to become thinner. McCabe et al. (2004) also mentioned that these results in males depend on the body mass index of males, i.e. both males wanting to lose weight and males wanting to gain weight and muscle can both develop body dissatisfaction. However, similarities in levels of female and male body dissatisfaction were also reported in clinical groups. For instance, anorexic males showed levels of body dissatisfaction similar to those of women with anorexia nervosa (Sterling & Segal, 1985). Heywood et al. (2006) found that body dissatisfaction was associated with strategies to lose weight, dietary restraint and bulimia in males which is similar to findings in females. Additionally, this result in males who want to lose weight was also observed in the results involving females, while males who desired muscle mass did not show this association. Like female patients diagnosed with eating disorders, males seem to have higher levels of body dissatisfaction. However, there is a difference between increase of muscle and increase of weight in males with disordered eating symptoms, and what plays a role in weight loss for both of these processes is still unclear.

As described above, many studies reported that body dissatisfaction is one of the important variables which commonly predict the onset of an eating disorder (Jacobi et al., 2004; Polivy & Herman, 2002; Stice et al., 2002). However, to understand the mechanisms behind the function of body dissatisfaction in eating disorders it is

necessary to examine more studies about the role of body dissatisfaction in disordered eating pathology. Some research showed, for example, that body dissatisfaction does not lead to eating disorders (e.g., Striegel-Moore & Cachelin, 2001) or body dissatisfaction may be different in anorexia nervosa and bulimia nervosa (e.g., Garner, 2002). Presumably, there are effects of other risk factors for eating disorders and interactions among potential risk factors or other functions of body dissatisfaction which are still unknown. Furthermore, more studies are needed on the effects of therapy for body dissatisfaction from various clinical and non-clinical groups.

2.1.4. Body Checking Behavior

Body checking is the ritualistic and compulsory examination of one's shape, size or weight (Shafran et al., 2004; Rosen, 1997). Examples of body checking behavior include examining one's body or specific body part in the mirror, using the fit of clothes to judge shape or weight change, negative comparison of oneself to other people, or feeling for bones (Rosen, 1997; Shafran et al., 2004). This frequent checking behavior of body shape, size and weight could reinforce body dissatisfaction in eating disorder patients (Williamson, Muller, Reas, & Thaw, 1999). Shafran, et al. (2007) mentioned that body checking behavior likely increases body dissatisfaction, feelings of being overweight and self-critical thoughts about one's body. Thus, body checking is a core expression of psychopathology and is a psychological risk factor for the development of eating disorders (Williamson et al., 1999; Fairburn, et al., 2003).

Research findings have examined dieting behavior as a representative behavioral expression and behavioral symptoms of eating disorders. However, there is little research of other behavioral expressions such as body avoidance and body checking. For instance, it is unknown when body checking begins, the impact on disordered eating attitudes it has, its relationship with dieting, and the role of cognitive biases therein (Shafran et al., 2004). In addition, it is unclear what the exact relationship between body checking behavior and body dissatisfaction is, or what role body checking plays in eating disorder psychopathology (Shafran et al., 2007). Moreover, an instrument to

assess body checking behavior was first developed in 2002 by Reas et al. They suggested that the measurement of body checking may be useful to design preventative programs for clinical eating disorders or for treating eating disorder patients. Furthermore, researchers suggest that body checking behavior seems to lead to dietary restraint and relates to overvaluation of weight and shape (e.g., Fairburn et al., 2003). According to research by Shafran et al. (2004), patients with eating disorders examined their bodies significantly more and showed more overvaluation of weight and shape than a non-clinical group. In particular, the body checking behavior increased motivation for further dietary restraint. Additionally, Reas, Grilo, Masheb and Wilson (2005) found significant levels of body checking in overweight men and women with binge eating disorder and found an association between overvaluation of weight and shape and frequency of checking behavior. In addition, body checking behavior is commonly associated with overvaluation of weight and shape in obese males and females (Grilo, Reas, Brody, Burke-Martindale, Rothschild, & Masheb, 2005).

Studies of the role of body checking in males are also scarce, but it has been reported that body checking behavior in males is much rarer than in females (Striegel-Moore, Rosselli, Perrin, DeBar, Wilson, May, & Kraemer, 2009). Results of a few studies of males reported that body checking is frequently observed in those diagnosed as overweight or with binge eating habits and who are overly concerned about their body shape and weight or who have restraint eating habits, low self-esteem and body dissatisfaction. These findings are similar to those of females. Moreover, body checking in males is significantly associated with symptoms of muscle dysmorphia and negative affect and is an important construct of male body image in some studies (e.g., Grilo et al., 2005; Walker, Anderson, & Hildebrandt, 2009).

In regard to emotions, Haase, Mountford and Waller (2007) reported a relationship between social physique anxiety and body checking behaviors in women without eating disorders. In particular, the results showed that body checking was associated with both, whole body and specific body parts and social physique anxiety. They were related to all cognitive and behavioral elements of body checking. However, the relationship between body checking and other affective or cognitive symptoms in eating disorders needs to be investigated further.

In conclusion, body checking behavior and how it relates to eating disorders needs to be studied further. In particular, body checking behavior's relationship to other disordered eating pathologies in both non-clinical and clinical groups needs to be examined. Recent research by Striegel-Moore et al. (2009) suggested that important points to study in future research are body checking behavior in non-White populations and gender differences in body checking behavior.

2.1.5. Body Shame in Eating Disorders

2.1.5.1. General Shame

Shame is a broad term with several definitions from different aspects and has been described as a complex set of feelings, cognitions and actions (Gilbert & Miles, 2000). Shame is usually described as a painful self-conscious emotion involving negative evaluations of the self and feelings of inferiority (Tangney, Miller, Flicker, & Barlow, 1996; Lewis, 1987; Andrews, 1997; Gilbert, 2000). In addition, shame is considered both a consequence and a source of psychopathology (Tangney, 1999), and shame is evoked in response to social rejection and other events that threaten the individual's self-esteem, social status, and sense of belonging (Van Vliet, 2008).

According to Fischer and Tangney (1995), shame is, in spite of diverse definitions, an experience that is self-focused and dependent on one's ability to construct oneself into a social negotiator and is thus called a self-conscious emotion. Therefore, shame is associated with many cognitive and affective issues related to self, such as self-esteem, self concept and body image which play an important role in social contexts (Kaufman, 1989). These diverse concepts of the self regarding shame are specifically affected by culture. This indicates shame could have different effects on individuals from different cultures and societies. As examples of this, research results have found that shame is more prevalent in East Asia compared to Europe or America (Kitayama, Markus, & Matsumoto, 1995; Frank et al., 2000). Thus, many cultural psychologists study the

differences between the relationships among emotional expressions such as shame and how they relate to self-function and self-development in diverse ethnic groups (Markus et al., 1991; Stephan, Stefan, Saito, & Barnett, 1998).

Regarding the dimensions of shame suggested by Kaufman (1989), shame can be internalized, i.e. one can be ashamed of oneself, about one's own feelings of personal attributes, personality characteristics or behaviors. On the other hand, shame refers to how one thinks others see him or her on a cognitive level. Therefore, shame can be described as two-dimensional; *internal* shame is focused on negative self-evaluation emotions while *external* shame is focused on one's fear of others' judgments (Gilbert, 1998). External shame usually occurs in interpersonal situations. When these experiences of external shame occur repeatedly, internal shame can be reinforced as well. Likewise, it is possible that the higher the level of internal shame, the higher the level of external shame. Thus, shame could have more of an effect on the behavior of people in East Asia where the society is considered to be more collectivistic as Western societies. East Asians are typically more concerned about their own behavior in the sight of other people and in their relationships with other people because of their desire for belonging and their fear of judgment by other people (Kitayama et al., 1995). This finding indicates that East Asians could be more sensitive to shame and suffer more quickly from shame-based emotions than Western people.

2.1.5.2. Shame and Body Shame in Eating Disorders

Studies of the relationship between general shame and psychopathology were published about 20 years ago, and scales for measuring shame were developed in the 1990s. Research showed that patients with eating disorders have severe affective symptoms and comorbidity with anxiety disorders or depression (e.g., Santos et al., 2007; Kaye, Bulik, Thornton, Barbarich, & Masters, 2004). Unfortunately, there are relatively few studies on shame. However, the number of studies has recently been increasing in Western societies where some materials for measure of shame including body shame have been developed (Andrews, Qian, & Valentine, 2002).

Goss and Gilbert (2002) described a cycle of shame for binge eating as having biological factors (e.g., genes, temperament), personal factors (e.g., abuse, criticism, teasing, and rejection) and sociocultural factors (e.g., cultural focus on weight, control as attractive). These three factors play a role in both the onset of external shame, which can appear as a fear of rejection, and in the onset of internal shame as a feeling of inferiority or self-dislike. Both external and internal shame cause further affective instability which leads to the control of negative affect and the attempt to avoid binge eating and purging. This desire to control the affect, as well as avoidance behavior, can at first lead to rebellion and the disassociation from negative affect. However, in the long term, it leads to fear and self-disgust of the binge eating behaviors which further encourages weight control and strengthens the experience of external and internal shame (Goss et al., 2002). Other studies have also shown a relationship between shame and disordered eating symptoms. For example, a study by Sanftner, Barlow, Marschall and Tangney (1995) showed that body dissatisfaction and drive for thinness correlate significantly with shame. They revealed that shame in eating-related situations appears to be a strong predictor of the severity of eating disorder symptoms. Furthermore, shame was found to be highly related to bulimic symptoms in both clinical and non-clinical student groups (Hayaki, Friedman, & Brownell, 2002). Swan and Andrews (2003) reported that an eating disorder group showed a significantly higher shame experience in relation to eating behavior than a non-eating disorder group. Moreover, women with binge eating behaviors reported more fluctuations in and higher levels of shame than women without this diagnosis (Sanftner & Crowther, 1998). Thus, people with eating disorders or with disordered eating attitudes often showed high rates of shame, mostly involving cases with negative self-evaluation and the feeling that others are judging their bodies.

Body shame is the shame one feels in response to how one's body looks. This concept of body shame can be used in psychological disorder contexts of sexual abuse, body dysmorphic disorder or eating disorders. In the current study body shame is reflected in the relationship with eating disorders only. Researchers suggest that eating disorder patients feel ashamed about the appearance of their body and avoid looking at their own body. They use this shame to control their disordered eating behaviors and

their weight which leads cyclically to more body shame (Stormer & Thompson, 1996; Goss et al., 2002). According to Goss et al. (2002), body shame can also relate to how one's body functions. For example, obese patients feel shame for not being able to perform normal activities (e.g., walking long distances or physical playing) which motivates them to restrict caloric intake. Markham, Thompson and Bowling (2005) suggested internalization of a thin-ideal, comparison of appearance to others, low body image esteem, and low global self-worth as risk factors for experiencing and increasing body shame. Exposure to idealized body image also led to increased body shame in a non-clinical student sample (Monro et al., 2005). Additionally, Burney and Irwin (2000) argued that the severity of eating disorder pathology is strongly related to shame in eating contexts and to shame of the body. This body shame seems to have a causal role in the development of eating disorders (Burney et al., 2000).

Unfortunately, there are only a few tests for measurement of body shame and very few previous studies on body shame. In particular, cross-cultural research is especially scarce. Much is unknown about how body shame, with and without eating disorders, affects males or how it operates in the contexts of various cultures. Shame including body shame is a severe emotional symptom of several clinical disorders including eating disorders (Andrews, et al., 2002), and it should be researched more, especially in regard to cross-cultural study.

2.1.6. Social Appearance Anxiety in Eating Disorders

Jacobi et al. (2004) remarked that anxiety is a risk factor in eating disorders and eating disorders often occur in comorbidity with anxiety disorders. A review by Pallister and Waller (2008) reported higher rates of generalized anxiety disorder, social phobia and agoraphobia which are often associated with all types of eating pathology. Obsessive-compulsive disorder has been consistently associated with restrictive eating pathologies. The relationship between eating disorders and obsessive-compulsive pathology has often been reported and it has been shown that disordered eating behavior is highly correlated with an obsessive character (e.g., Kaye et al., 2004; Garner,

Olmsted, Bohr, & Garfinkel, 1982). Despite some differences in detail, such as symptoms among all types of anxiety disorders and all types of eating disorders, anxiety is associated with eating pathology, including the fear of negative appearance evaluation and drive for thinness.

Researchers have suggested that eating disorders and social anxiety are commonly combined in individuals that have significant concerns about how they appear to others. Because social anxiety is a strongly self-related disorder, similar to the emotion of shame, it correlates positively with low self-esteem which also closely relates to disordered eating pathology. In a study reported by Gross and Rosen (1988), it has been shown that women with eating disorders tend to have a higher need for social approval and achievement and experience higher social anxiety and lower self-esteem. Additionally, this social anxiety is a factor that predicts general eating disorder symptomatology. Several studies suggest that the onset of anxiety disorders is in childhood, which is usually earlier than the onset of a typical eating disorder (Kaye et al., 2004). In a similar vein, the results of a study by Godart, Flament, Lecrubier and Jeammet (2000) showed that anxiety disorders exist before eating disorders. Thus, it is possible that anxiety is a factor to predict disordered eating symptoms.

Moreover, regarding the body in the relationship between social anxiety and eating disorder, individuals who think and negatively evaluate their bodies tend to pay attention to how others view their body, which results in limited social activity (Hart, Leary, & Rejeski, 1989). This behavior is referred to as social appearance anxiety. In research the expressions “social physique anxiety” and “social appearance anxiety” are used. Many studies have used the expression “social physique anxiety”, while the term “social appearance anxiety” is relatively new. Physique is represented by height, weight and muscle tone, while appearance includes size, shape of face, body and so on (Hart, Flora, Palyo, Fresco, Holle, & Heimberg, 2008). Hart et al. (2008) suggested that overall physical appearance might be more associated with social anxiety than physique because of societal stresses on overall attractiveness. In support of this suggestion, patients with eating disorders not only have dissatisfaction with their physique, but also their overall body including each body part (Presnell, Bearman, & Stice, 2004). For example, items of the Body Shape Questionnaire that assess body dissatisfaction in

regard to eating disorders include questions about weight, feelings toward one's body, size and also body shape (Cooper, Taylor, Cooper & Fairburn, 1987). Therefore, the concept of a social appearance anxiety instead of a social physique anxiety might be a suitable expression and an aspect to measure regarding body dissatisfaction in disordered eating behavior (Hart et al., 2008).

Some studies have shown the relationships between social appearance/physique anxiety and disordered eating symptoms including body dissatisfaction. For instance, dissatisfaction of one's body and an extreme concern with dieting and thinness are strong predictors of social physique anxiety (Hausenblas et al., 1999). In addition, body dissatisfaction and drive for thinness strongly predict social physique anxiety in female athletes (Krane, Stiles-Shipley, Waldron, & Michalenok, 2001). Furthermore, findings showed that in adolescents social physique anxiety influenced the drive for thinness (Brunet, Sabiston, Dorsch, & McCreary, 2010). Moreover, social physique anxiety is related to body dissatisfaction including negative body image and is a risk factor for the development of eating disorders in young non-clinical females (Thompson & Chad, 2002) and also in adult females (Hart et al., 1989). In spite of the low number of studies about social appearance anxiety, there are some studies that report positive relationships between social physique anxiety or social appearance anxiety and disordered eating symptomatology.

In conclusion, researchers have argued that there is a cultural variation in social anxiety because of differing self-concepts in each culture, i.e. independent view and interdependent view of the self by Markus et al. (1991). For example, the cross-cultural study on social anxiety in children by Ollendick, Yang, King, Dong and Akande (1996) showed that Chinese children reported more social anxiety and were more concerned with self-control, emotional restraint and compliance to social rules than American children. Thus, social anxiety is affected by differences of culture, and the function of the self in one's own society appears as different levels of anxiety or is found in different forms in each culture (Kleinknecht, Dinnel, Kleinknecht, Hiruma, & Harada, 1997). According to Hart et al. (2008), one's view of their appearance is also affected by societal and cultural differences. Thus, it can be presumed that social appearance anxiety may be perceived differently in different cultures. Therefore, more research is

needed in the field of social appearance anxiety and to examine the function of eating disorder symptoms in various cultures (Hart et al., 2008).

2.1.7. Relationship between Body Shame and Social Appearance Anxiety

The relationship between body shame and social appearance anxiety in eating disorders has recently attracted more attention (e.g., Monro et al., 2005; Thompson, Dinnel, & Dill, 2003). According to Gilbert et al. (2000), in social anxiety and shame it is important how one appears to others; therefore, both social anxiety and shame can be shown as overlapping in contexts of social attractiveness, evaluation and rejection or criticism, and so on. Hence, a high positive correlation of body shame with social appearance anxiety in eating disorders is expected, even though it is unknown what intimate differences there are in both processes.

Several studies investigated the relationship between general shame and anxiety. For example, researchers found that a strong positive relationship between social anxiety and shame in eating disorders needs to be regarded as an important influencing factor in anorexia and bulimia nervosa (Grabhorn et al., 2006). The correlation was reported between appearance anxiety and shame in a non-clinical group as well (Hausenblas et al., 1999; Monro et al., 2005). Additionally, body image shame has a positive correlation with social anxiety (Thompson, et al., 2003). Moreover, in regard to body shame and social appearance anxiety of the sociocultural aspect, Monro et al. (2005) found that idealized body image led to increased body shame and appearance anxiety and provided further support for sociocultural determinants of body image and eating disturbance. Women with disordered eating symptomatology tend to have a high need for social approval, experience high social anxiety, shame and low self-esteem. Due to the internalization of beauty and body ideal from their society and culture, these women are more concerned with their appearance and with their dieting behaviors, and they identified the model of beauty as an unreal ideal. This behavior can lead to disordered eating attitudes. It is a cyclical pattern that reinforces more negative emotions and

behaviors of eating disorders including body shame and social appearance anxiety and strengthens the unreal ideal of appearance.

Despite the fact that few studies on body shame and social appearance anxiety in relation to body dissatisfaction in eating disorders have been done, the results that exist have shown that they do play a role in eating disorder pathology and are predictors of eating disorders, especially in female groups (e.g., Thompson et al., 2003; Monro et al., 2005). However, the literature on how body dissatisfaction is related to social appearance anxiety or body shame in males is very limited, and it is yet unknown how these emotions function in males with eating disorders or how body dissatisfaction affects their behavior. Furthermore, there are very few studies on the relationship between body shame and social appearance anxiety how they relate to body dissatisfaction in eating disorders among diverse ethnic groups (Russel & Keel, 2002).

2.1.8. Summary

Eating disorders are prevalent in Western societies. Gender biases, weight concerns, dieting, negative body image, low social support, psychiatric morbidity, sexual abuse or physical neglect and eating conflicts in childhood have been suggested risk factors for the development of eating disorders. In particular, body dissatisfaction and negative affect can be influential in the perpetuation of disordered eating symptomatology. Additionally, eating disorders reinforce body dissatisfaction and negative affect. In terms of the mechanisms that perpetuate eating disorders, the concern of body shape and weight is considered to be an important factor. However, several factors such as body checking of body shape and weight concern and body shame or social appearance anxiety of negative affect have not been deeply investigated, particularly in cross-cultural studies. Therefore, more research is needed to compare individuals from Western countries with individuals from non-Western countries in order to understand the role of these variables in disordered eating pathology from diverse ethnic groups.

2.2. Cross-Cultural Study

2.2.1. Culture and Self

In cross-cultural studies, it is necessary to stress the meaning and importance of culture, especially regarding the concept of self within that culture. The concept of self consists of all statements made by a person, links to all aspects of social motivation and interrelates with cognition, emotional expression and the motivational process (Triandis, 1989; Markus et al., 1991). According to Markus et al. (1991), there are two views of the self. The first is an *independent* view of self and the second is an *interdependent* view of self. The independent view of self is characterized as being separate from social context with a bounded structure of self, internal or private features regarding thoughts or feelings, uniqueness, expression of self, realization of internal attribution, promotion of one's own goals, being direct with others, self-evaluation and ability to express oneself. In contrast, the interdependent view of self is characterized by its connection with social context, a flexible structure of self, external or public features regarding roles or relationships, belongingness, occupation of one's proper place, engagement of appropriate action, promotion of others' goals, being indirect with others, self-definition, and the ability to adjust. These different constructs of self appear with different processes of cognition, emotion and motivation in each society and each cultural context (Markus et al., 1991).

Culture is the part of the environment created by people. It is formed over many years by ideas and by members of older generations, exchanged from generation to generation, and is strongly experienced during childhood in which the internalization of cultural values takes place (Brislin, 1990). Brislin (1990) mentioned that culture is taken for granted by each individual and results in the socialization experiences of individuals. In addition, culture appears in people's perceptions, beliefs, values, norms, languages, customs and behaviors in the natural environment, the built environment and the social environment (Pandey, 1990). Thus, culture interrelates closely with the individual and

that individual's judgments and behaviors. Each individual experiences the culture of his or her society, is influenced by cultural inheritances, and contributes to the culture within his or her society. Furthermore, many important differences exist in the specific content, structure, and functioning of the self-systems of people with different cultural backgrounds (Markus et al., 1991).

To explain these various consequences of the relationships or interactions between the self and culture, researchers suggested concepts such as individualism versus collectivism (Triandis, 1989; Hui, 1988; Hofstede, 2001), social orientation versus individual orientation (Greenwald, 1980), and field independence versus field dependence (Witkin & Goodenough, 1977). The concepts of individualism and collectivism are persuasive concepts which explain and lend to an understanding of the cultural functions and the different influences on each society and the individuals within those societies.

2.2.2. Differences between Individualism and Collectivism

The construal of the self in the interdependent view supports collectivistic culture, while the self in the independent view supports individualistic culture (Markus et al., 1991). American culture and many Western European cultures are usually considered individualistic societies, while most Asian cultures including East Asia are characterized as collectivistic societies (Triandis, 1990). These two differing societies are expected to display differences in concepts of self which are strongly associated with social behaviors.

Individualism encompasses strong self-reliance, independence, individual uniqueness and individual goals, whereas collectivism is associated with close interrelations within in-groups, collectives, conformity to in-group goals and avoidance of conflicts with others (Triandis, 1989). In in-groups, collectivists are usually intimately and deeply interrelated to each other, while individualists can join multiple in-groups with superficial relationships (Triandis, 2001). Hence, when belonging to social in-groups such as a specific peer group, conformity and compliance to social or

group norms are more important for individuals in collectivistic societies compared to individualistic societies (Chung & Mallery, 1999). This desire for belonging and the ensuing behavioral changes needed for acceptance in the in-groups shows a part of the adjustment behaviors needed for living in societies and appears as an adaptation to conformity and a commitment to others. Additionally, Matsumoto, Yoo and Fontaine (2008) mentioned that individuals in individualistic cultures do not rely as much on identification with groups for the effective functioning of an individual's survival. In individualistic cultures the self is independent, unique and oriented more to oneself than to others, contrary to the self in collectivistic cultures (Traindis, 2001).

Researchers suggest theoretical and empirical differences between individualism and collectivism regarding issues such as emotion expression, coping behavior, cognitive perception, and attachment behavior and so on. For instance, Matsumoto et al. (2008) found that individualism was positively associated with higher expressivity norms in in-groups. This indicated that individualistic cultures support more expressions of both negative and positive emotions in in-groups. Furthermore, individuals in collectivistic cultures show more commitment to in-groups than individuals in individualistic cultures (Wheeler, Reis, & Bond, 1989). In addition, Chung et al. (1999) reported differences between individualism and collectivism in a way that a higher level of collectivism was associated with an increased desire to compare oneself with others.

However, a study by Stephan et al. (1998) found no significant differences between Japanese and US college students on the subscales of the individualism-collectivism measures and suggested that collectivistic influences in individualistic Western societies and individualistic influences in collectivistic non-Western societies are assumed to be an explanation for this result. Despite the limitation of the sample, this study showed the similarity between individualistic and collectivistic societies and could suggest that interrelations among different societies and cultures have increased over the years. However, these two societies of individualism and collectivism have frequently been reported to differ in many ways. Hence, further cross-cultural studies should be expected to show more cultural differences as well as similarities.

In conclusion, America and many Western European countries including Germany can be described as individualistic societies, whereas East Asian countries including

Korea represent collectivism. As mentioned above, the features of individualism and collectivism show differences between each society and individual. Consequently, significant differences between Germans and Koreans are assumed in many cases such as perception or expression of emotions. On the other hand, because of a great movement and changes among different cultures today, some cultural similarities have been found among various societies. Thus, a cross-cultural study is needed to consider the changing cultures of today. In spite of that, there are many unaltered differences between Western and non-Western cultures and societies. Hence, the constructs of individualism and collectivism can still offer persuasive explanations for understanding different cultures and their individuals.

2.2.3. Goal of Cross-Cultural Study

In the past, cross-cultural or cultural psychologists developed theories and gathered experiences about global and abstract concepts of culture with measurable psychological variables. In the present-day, cross-cultural psychology includes variables tapping into cultural differences in the specific target variables of interest in each study and show increased sensitivity to the use of psychological dimensions of culture to explain cultural differences such as individualism versus collectivism (Adamopoulos & Lonner, 2001). Furthermore, current cultural and cross-cultural psychologists have focused more on the methodology of those examinations (Van de Vijver, 2001). Regarding the methodological design for cross-cultural studies, Van de Vijver (2001) suggested developing research instruments that are better suited for examining intact groups. This methodology in cross-cultural study is becoming one of the most important issues currently being discussed. Additionally, most issues of cross-cultural and cultural psychologies are cognition and emotional processes, social behavior differences, diagnosis and clinical psychology.

Thus, the results and findings of cultural psychology and cross-cultural psychology, such as the concept of individualism and collectivism, are useful knowledge for most cross-cultural studies in various fields of clinical psychology, i.e. one can use this

knowledge of cultural differences as a background explanation for results of a cross-cultural study in each field. Additionally, the results and recommendations regarding methodological problems given from cross-cultural and cultural psychology could be useful in order to design a cross-cultural study in clinical psychology as well. In fact, large numbers of studies taking multiple cultures into consideration have focused on the differences or similarities among other cultures or ethnic groups, i.e. comparing interesting or potentially determined variables of each study field and stressing cultural differences with concepts of cultural psychology.

In conclusion, cultural psychology is aimed at understanding how the mind and culture define and constitute each other in specific contexts and how to avoid direct contrasts across cultures. Cross-cultural psychology aims to study similarities and differences in psychological functioning in various cultures and ethnic groups as well as to compare explicitly or implicitly, thought and behavior in different cultures (Adamopoulos et al., 2001). These goals of cross-cultural psychology can be primary aims for the cross-cultural study in other fields of psychology. Specifically, the current studies in the field of eating disorders by Soh, Surgenor, Touyz and Walter (2007) argued that the focuses have to include speculation about different risk factors in non-Western cultures, cultural variation in the expression of symptoms, and whether outcomes differ in Western and non-Western societies.

2.3. Cross-Cultural Studies in Eating Disorders

2.3.1. Cross-Cultural Studies on Eating Disorders

In the late 1970s and early 1980s, research described very few women with eating pathology from non-Western societies or from diverse ethnic groups in Western societies (Humphry & Ricciardelli, 2004). At that time, an eating disorder was often considered a disorder which afflicted to Caucasian women in Western countries and it was considered to be a culture-related disease, i.e. culture-bound syndromes (Swartz, 1985). In order to explain this greater prevalence of eating disorders in Westerners compared to non-Westerners, some researchers proposed possible reasons. One of these proposed reasons is that weight concerns and the value of thinness in Western culture develop into disordered eating behaviors and body dissatisfaction (Rieger, Touyz, Swain, & Beumont, 2001; Raich, Rosen, Deus, Perez, Requena, & Gross, 1992). That is the traditional value in Western culture: the demand of thinness or physical attractiveness in order to achieve one's aims in society (Pate, Pumariega, Hester, & Garner, 1992).

However, since the late 1980s, eating pathology and body dissatisfaction has been reported in immigrant groups as well as second- and third generations of immigrants in the United States, United Kingdom and Australia. More cross-national and cross-cultural studies have been conducted since. The diverse ethnic groups in the US often included Hispanics, African Americans, Asian Americans, and other minorities (Crago, Shisslak, & Estes, 1996). In addition, Asian Australian groups in Australia and British Asian groups in the UK have often been compared to the prevalence of eating disorders, control of weight, body dissatisfaction, disordered eating attitudes and effects of negative emotions in Caucasians (Jennings et al., 2006; Furnham & Husain, 1999).

Empirical studies of eating disorders have been focused more on different ethnic groups in Western countries. It has been shown, for example, that non-White women including Hispanic and African American women who were achievement oriented

tended to experience disordered eating behaviors (Silber, 1986), and African Americans with a higher socio-economic standing showed higher rates of eating pathology compared to White Americans (Gard & Freeman, 1996). Furthermore, a couple of British studies suggested that British Asians who have a more traditional family background reported higher scores on the Eating Attitudes Test than British Caucasians (e.g., Dolan, Lacey, & Evans, 1990; Mujtaba & Furnham, 2001; Mumford, Whitehouse, & Platts, 1991). Additionally, it was found that Australian females with a Chinese family background showed higher scores of eating pathology than native Australians (Lake, Staiger, & Glowinski, 2000). Furthermore, Asian women living in Western countries experience greater eating disorder symptomatology than their Caucasian counterparts (Hall, 1995). Some researchers also suggested that a few ethnic minorities living in Western cultures may be at high risk for the development of eating disorder symptoms or have more unhealthy attitudes toward eating than they would in their own countries (e.g., Kempa & Thomas, 2000; Jennings et al., 2006). These studies have proposed the cultural clash phenomenon between traditional cultures in non-Western and Western societies and might explain the development of eating disorders in women from non-Western background. This may be because they experience intrafamily conflicts, internal conflicts, a sense of disconnectedness in their Western societies and the desire to be Westerners or to identify themselves more as Westerners. In particular, young girls and women have a higher risk of developing an eating pathology (Mumford et al., 1991; Lake et al., 2000).

However, several studies have found that in a variety of countries and cultures women including Hispanic, African American and Asian American experience levels of body image disturbance and eating disorders that are similar to levels found in Western samples (e.g., Lunner, Wertheim, Thompson, Paxton, McDonald, & Halvaarson, 2000; Gupta, Chaturvedi, Chandarana, & Johnson, 2001; Sheffield, Tse, & Sofronoff, 2005). Furthermore, other studies have not found ethnic or racial differences in weight perception, body concern, body dissatisfaction, levels of dietary restraint and disordered eating attitudes (e.g., French, Story, Neumark-Sztainer, Downes, Resnick, & Blum, 1997; Cachelin, Striegel-Moore, Elder, Pike, Wilfley, & Fairburn, 1999; Furnham & Adam-Saib, 2001; Cachelin, Rebeck, Chung, & Pelayo, 2002). In addition, the results of

the cross-cultural study among Westerners are remarkably similar in the levels of eating pathology. For example, Americans have been reported to have similar levels of bulimic symptoms to Austrians (Mangweth, Pope, Hudson, & Biebl, 1996).

As mentioned above, cross-cultural studies of eating disorders have provided diverse findings (Soh et al., 2006). The sample in research is possibly one important reason for it. The sample was often limited, i.e. in research the samples in clinical settings were often too small to generalize anorexia nervosa or bulimia nervosa, and the non-clinical group usually included only college students who were highly educated and achievement oriented. Therefore, the findings can not be generalized to women who are less educated, older and belong to different ethnic groups (Tsai, Curbow, & Heinberg, 2003; Edman et al., 2005; Kusano-Schwarz & von Wietersheim, 2005; Sheffield et al., 2005). Because participants are usually determining factors for the results of research, when the sample is limited it is difficult to generalize the results from one set for one particular ethnic group.

In spite of the limited samples and diverse results of the cross-cultural studies, epidemiological findings in cross-cultural studies of eating disorders have shown an increase in eating related psychopathology among non-Caucasian women. Possible important reasons for the rising number of cases of eating disorders among different ethnic groups can be the economic development of non-Western countries and their increasing exposure to Western culture (Ricciardelli et al., 2007; Gunewardene, Huon, & Zheng, 2001). Many non-Western countries are developing rather quickly economically and are adopting cultural values from the West such as an ideal look or body image in order to achieve social status (Pate et al., 1992). Thus, over the years the results of the research done in this field have shown more psychological problems with eating attitudes in non-Western societies. However, despite increased cross-cultural research, the extent of the influences on the development of eating disorders and interaction between Western culture and one's culture in non-Western countries is still unclear.

2.3.2. Cross-Cultural Studies on Body Dissatisfaction

Studies on body dissatisfaction have compared cross-cultural research on eating disorders of White women with other ethnic groups in Western countries and it is frequently reported that African American females have more positive views of their bodies and experience fewer distresses about being overweight than White American females (Rucker & Cash, 1992; Powell & Kahn, 1995). Furthermore, African Americans and Asian Americans have less body discrepancy and less body dissatisfaction than Caucasians (Altabe, 1998; Akan & Grilo, 1995). Likewise, African Americans and Asian Americans diet less and experience less concern about weight and body dissatisfaction than White American women (Story, French, Resnick, & Blum, 1995). Additionally, Caucasians report higher levels of dietary restraint, and show higher body dissatisfaction than African Americans or Asian Americans (Story et al., 1995; Lowry, Galuska, Fulton, Wechsler, Kann, & Collins, 2000; White & Grilo, 2005). Among Westerners, Australian and Italian women have reported similar levels of dieting and body dissatisfaction (Tiggemann, Verri, & Scaravaggi, 2005). Thus, it seems to be that Caucasians in Western countries experience more cultural pressure to be thin and have more body dissatisfaction than other non-Western ethnic groups.

On the other hand, there is also evidence of high levels of body dissatisfaction in non-Western ethnic groups. For instance, Kennedy, Templeton, Gandhi and Gorzalka (2004) examined the levels of body satisfaction among Chinese, Indo-Asian and European students. The result showed that the Chinese students reported the lowest levels of body satisfaction, Indo-Asians were the next lowest group and the Europeans reported the highest levels of body satisfaction. Additionally, similar levels of body dissatisfaction were found among North European Australians, East Asian Australians, Singaporean Chinese and North Europeans with eating disorders. In particular, the Singaporean Chinese women without eating disorders reported greater body dissatisfaction than all other groups without eating disorders (Soh, Touyz, Dobbins, Surgenor, Clarke, Kohn, Lee, Leon, Rieger, Ung, & Walter, 2007). However, the results of research on body dissatisfaction from different ethnic groups are not consistent and are limited by the sample or the methodology in many cross-cultural studies. In addition,

many non-Western countries are changing culturally and adopting Western cultures; thus, these changes can lead to an increase in body image disturbance and body dissatisfaction in non-Western ethnic groups (Stice et al., 2002; Soh et al., 2006).

2.3.3. Males from Diverse Ethnic Groups

There have been relatively fewer cross-cultural studies of eating disorders in males than in females. Recently, studies have investigated disordered eating symptoms among males in Western countries. In addition, there are also a number of studies that have examined disordered eating among men from different ethnic groups. Overall, males with non-Western heritage such as Asia or Africa have reported less body dissatisfaction, more positive body image and higher body-esteem than White American males, and they have been reported to have experienced fewer disordered eating behaviors (e.g., Yates, Edman, & Aruguete, 2004; Russell, 2002). However, in a study by Chao, Pisetsky, Dierker, Dohm, Rosselli, May and Striegel-Moore (2008) an increase in weight control in adolescent males from White, Black and Hispanic backgrounds was discovered over the period from 1995 to 2005.

Other studies have shown that young Black males try more to control their weight and spend more time dieting than White male groups (e.g., Neumark-Sztainer, Croll, Story, Hannan, French, & Perry, 2002). Additionally, young Black males showed higher levels of binge eating symptoms than White male groups (e.g., Story et al., 1995; Aruguete, Nickleberry, & Yates, 2004). Asian males, in particular Chinese males, have reported higher levels of body dissatisfaction in regard to their weight and to dieting than American male groups (e.g., Davis & Katzman, 1998). However, there are only a few differences between Hispanic males and White males, and many cross-cultural studies showed no differences between Native Americans and native Australians (Ricciardelli et al., 2007).

Thus, the studies of eating disorders and body dissatisfaction in diverse ethnicities of males have shown inconsistent results and the sample groups are not varied enough to generalize. Additionally, there is an assumed change in the views of body image or

body ideal for men, especially in younger generations. Regarding this tendency, Ricciardelli et al. (2007) suggested that the influential factors for the development of eating disorders in males from different ethnic groups are body build, level of acculturation, socio-economic status, media exposure, and internalization of the body ideal. The review by Ricciardelli et al. (2007) also showed that males who strive for cultural engagement use more extreme weight loss strategies and binge eating behavior than White American males. In addition, males from developing countries with fast changing social structures appeared to be at greater risk of developing eating problems. Thus, several researchers have suggested that the prevalence of eating disorders in males in non-Western societies seems to be related to the level of economic development of their country, and that these males have difficulties with the conflicts between traditional cultural value and the influence from Western cultures (Soh, et al., 2006; Ricciardelli et al., 2007).

2.3.4. Body Dissatisfaction and Eating Disorders among East Asians

Eating disorders of East Asia were first published in Japan in the late 1970s, and since 1980 the frequency of eating disorders in Japan has increased significantly (Kusano-Schwarz et al., 2005). Other East Asian nations such as Hong Kong, Singapore, Taiwan and the Republic of Korea have described problematic eating attitudes and eating pathology in the international literature since the late 1990s. The first cross-cultural studies of eating disorders examined East Asians from immigrant populations, i.e. Americans with Asian heritage and other immigrants in the US or in the UK. Since then, studies have also compared Asians in East Asia with Caucasians as well as Asian Americans, Australians and British subjects with Asian heritage in Western countries. Overall, a number of studies have found that women living in East Asia have less disordered eating attitudes and body dissatisfaction than Caucasians (e.g., Furnham & Alibhai, 1983). Tsai (2000) researched the prevalence of eating disorders from English-language literature about East Asian countries and reported the range as being 0.025 to 0.030 % for anorexia nervosa, and 1.9 to 2.9 % for bulimia nervosa in Japan, while in

China anorexia nervosa rated 0.01 %, and bulimia nervosa between 0.5 and 1.3 %. This showed that the prevalence rates were lower than those of Westerners at the end of the 1990s.

On the other hand, research results showed that Chinese women have higher degrees of body dissatisfaction than Europeans (Kennedy et al., 2004). Other research has shown no significant differences in body dissatisfaction between Chinese and Caucasians or Australians (Davis & Katzman, 1999; Sheffield et al., 2005), as well as no significant differences in eating disturbances between Japanese and Americans (Mukai, Kambara, & Sasaki, 1998). When compared to rates in Western societies, the prevalence of eating disorders has been reported to be relatively higher in Chinese communities in Hong Kong, which is one of the more modern and economically developed cities in China, (Lee, Leung, Lee, Yu, & Leung, 1996).

Studies comparing native Asians and Asian Americans or Asian Australians have also been done. For example, studies involving Taiwanese indicated that the Taiwanese and Asian Australians including Taiwanese Australians have higher levels of disordered eating attitudes and body dissatisfaction than Caucasian Australians and European Americans (Jennings et al., 2006). In addition, Taiwanese who had more traditional non-Western cultural orientations had more body dissatisfaction and disordered eating attitudes and behaviors than Taiwanese Americans who had less traditional non-Western culture orientation (Tsai et al., 2003). The author suggested that the more traditional Asian females are likely responding to the culture clash between Asian and Western cultures as modernization rapidly occurs in East Asia. Moreover, among Asians, Japanese and Taiwanese both have strong desires for being thin, but Japanese have more body dissatisfaction and more often view their body shapes as fat than Taiwanese (Shih & Kubo, 2005). This shows both similarities and differences among Asians regarding the phenomenon of eating disorders and highlights the need for more cross-cultural studies to find some special factors that describe the differences between diverse Asian ethnic groups.

In Asian countries such as Japan and Hong Kong, body dissatisfaction and disordered eating behaviors have appeared more frequently in areas with high levels of income and appeared less frequently in areas with lower incomes (Mukai et al., 1998;

Lee et al., 2000). This is one point to explain the rapid development of eating disorders in non-Western societies. Eating disorder symptoms in East Asia are often strongly linked to economic status and modernization. For example, Lee et al. (2000) compared students from three different communities in China who came from different societal levels of modernization and economic situations. The results showed that students in wealthier societies such as Hong Kong have more disordered eating attitudes and body dissatisfaction than students from a less developed society. In rapidly changing and economically developing East Asia, eating disorders may develop quickly.

2.3.5. Influential Factors of Body Dissatisfaction and Eating Disorders in non-Western Ethnic Groups

In the literature review of a cross-cultural study by Crago et al. (1996), it was suggested that non-White females in the US who are younger, heavier, well educated, and more identified with White women and middle-class values have a higher risk of developing eating disorders, especially in the late 1990s. There are, however, more factors and possibilities of developing body dissatisfaction and disordered eating behaviors in non-Western ethnic groups. For example, Rieger et al. (2001) commented that Western manifestations of eating disorders and the dissemination of Western values regarding thinness are primarily responsible for the development of anorexia nervosa in non-Western contexts. As mentioned above, the cultural clash between Western cultures and traditional non-Western cultures can also explain the increasing eating disorder pathology in non-Western ethnic groups (Mumford et al., 1991).

Research of cross-cultural studies has also found many influential factors on the development of eating disorders in diverse ethnic groups. For instance, research suggests a strong association between body mass index, body image dissatisfaction and lowered self-esteem which influences the development of disordered eating symptoms in South Asian-American women (Iyer & Haslam, 2003). In addition, high internalization of a thin-ideal has led to extreme body dissatisfaction in Indian and Chinese Australian women (Shroff et al., 2004; Humphry et al., 2004) and disordered

eating behaviors in Mexican girls (Austin & Smith, 2008). Additionally, parental bonding or attachment in British Asians and in Asian women (Furnham et al., 2001; Tsai et al., 2003), gender roles, teasing history (Iyer et al., 2003; Shroff et al., 2004), peer pressure or social group (George, Erb, Harris, & Casazza, 2007), socio-economic status (Andersen & Hay, 1985), and industrialization or westernization (Gunewardene et al., 2001) all play an important role in the development of eating disorders in non-Western ethnic groups. Media influence such as internalization of magazines and television is also suggested as an important risk factor in the development of body dissatisfaction and eating disorders (Shroff et al., 2004; Tiggemann et al., 2005).

Numerous cross-cultural studies have suggested a sociocultural aspect as a very persuasive explanation of increased eating disorders in Western as well as non-Western societies (e.g., Tsai et al., 2003; Yamamiya, Shroff, & Thompson, 2008). The sociocultural theory emphasizes that the current societal standard for thinness and beauty in woman has increased worldwide over the years, especially through Western mass media and its idea that there is a connection between ideal beauty or thinness and achievement in societies. This ideal is often out of reach for the average woman. Thus, this cultural phenomenon with an unreachable thin-ideal provides a setting for the development of body dissatisfaction and proceeds to eating disorders (Thompson et al., 1999). Empirical research with sociocultural aspect has shown that the maladaptive messages in the media pressure individuals to develop bulimia nervosa, particularly when those messages are reinforced by family and peers or when the person already suffers from low self-esteem, an unstable self concept and perceptions of being overweight. This media influence, when internalized, may play a role in the development of extreme dietary restriction, purging or other disordered eating symptoms (Stice et al., 1996). In addition, Yamamiya et al. (2008) proved in non-clinical groups that in regard to the sociocultural aspect a tripartite influence on body image and eating disturbances in Japanese samples are similar to US samples, i.e. that family, peers, and media strongly affect eating disorders and body dissatisfaction in Japanese as well as in US participants.

In summary, it has often been shown in cross-cultural study that Western culture influences eating pathology in non-Western societies, and the prevalence of eating

disorders in non-Western countries is increasing more quickly than in Western countries at the moment (e.g., Tsai et al., 2003; Jung & Forbes, 2007). The clash of cultures of Western and non-Western societies can be an important factor in the development of eating disorders in non-Western cultures. Additionally, individuals are not independent of a changing culture in their societies, because the individual's self and the culture interact closely and affect further judgments or behaviors of the self (Markus et al., 1991). Therefore, they can be influenced by the changing cultures through interactions with family or social groups where they are living. Thus, non-Westerners can be influenced by the values of Western cultures, including its beauty ideal and its unreal standard of thinness, in their societies. In a review by Jacobi et al. (2004), it was stated that social, familial, psychological, developmental, and biological factors of an individual can lead to the development of eating disorders in non-Western countries. However, it is necessary in cross-cultural studies to examine the role, the interaction and the relationship between various factors of societies, individuals and cultures which relate to the development of eating disorders.

2.3.6. Germans and Koreans of Eating Disorders

There are not many studies about eating disorders in Koreans and no cross-cultural studies between Koreans and Germans in this field. Some possible reasons for this scarcity of eating disorder studies in Korea might be the delayed discussion of disordered eating pathology phenomenon in Korea compared to Western societies. In addition, the test materials for assessment of eating disorders such as the Dutch Eating Behavior Questionnaire (Van Strien, Frijters, Bergers, & Defares, 1986) or the Eating Disorder Inventory-2 (Garner, 1991) were first translated into Korean and validly examined relatively late in the 1990s.

In 1998, the prevalence rate of abnormal eating attitudes was studied. 1,249 males and 1,813 females from the Korean population were tested and the result showed that 8.5 % of the participants scored above the cut-off on the Korean version of the Eating Attitudes Test-26 (Lee, Rhee, Park, Sohn, Chung, Hong, Lee, Chang, & Yoon, 1998).

However, the exact prevalence of eating disorders in Korea today is unclear, but it is presumed to be similar to Western societies. It has consistently been reported that many young Korean women have strong body dissatisfaction, irregular eating attitudes, a strong desire for thinness, and diet often (Jackson, Keel, & Lee, 2006; Jung & Lee, 2006). For example, Sung (2005) reported that 40.8% of college women in Korea perceived their body to be overweight, while 62.1% were underweight as defined by BMI, and 88% of the women were dissatisfied with their body weight and shape. Despite limitations of the sample, this is a very high rate of body dissatisfaction and it suggests a tendency toward the development of eating disorders in Korea. Furthermore, when comparing Korean women with American women, Jung et al. (2006) found that the Korean sample scored higher than the US sample on 10 different measures of body dissatisfaction. In comparison with other Asians, Korean students had more irregular eating patterns and dieted more often than Japanese, but both groups are extremely concerned with their body weight and shape, despite low prevalence of overweight people (Sakamaki, Amamoto, Mochida, Shinfuku, & Toyama, 2005). Additionally, Korean and Chinese college women did not differ, and both samples had more behaviors associated with disordered eating than an American sample (Jung et al., 2007). In regard to risk factors, Ryu, Lyle and McCabe (2003) suggested body dissatisfaction is the most important risk factor associated with tendencies toward anorexia nervosa and bulimia nervosa in college students in Korea. Thus, research continually shows that Korean women have high body dissatisfaction and are at high risk of developing eating disorders. However, the samples of most studies about Koreans were limited to young women or college students. In addition, eating disorders of Korean males are relatively unknown to science, and there is still very little evidence from clinical groups of Korean subjects.

Consequently, the results of recent studies on eating disorders in Koreans indicated increasing disordered eating symptoms that are similar to those found in Western countries, but partly higher levels of disordered eating pathology than in Westerners. This increase in body dissatisfaction and disordered eating behaviors in Korea is influenced by Western culture and their values, and may be influenced by traditional collectivistic Korean culture as well, i.e. the features of collectivism, such as belonging

to a particular social group (e.g., peer group) and the adjustment to their social in-group or interdependent relationship, may play a role in the prevalence of eating disorders in Korea.

Germany, being a Western society country, has done many studies on the risk factors of the development of eating disorders and has done a lot of research on prevention as well as therapy programs (e.g., Jacobi, Morris, Beckers, Bronisch-Holtze, Winter, Winzelberg, & Taylor, 2007; Legenbauer, Vocks, & Schutt-Stromel, 2007). Eating disorders in Germany are very prevalent. Hence, risk factors and causes of eating disorders are studied much more and the validity of materials and the effects of diverse therapies are more often examined than in Korea. Germans in the cross-cultural study have been classified often as European American or as Europeans. Many studies have shown that Europeans, including Germans, have levels of eating disorders similar to Americans and have higher levels of disordered eating attitudes than other ethnic groups (e.g., Pate et al., 1992).

In a recent cross-cultural study between Germans and Japanese, comparisons examined the differences in the measures of the Eating Disorder Inventory (Kusano-Schwarz et al., 2005). The results of this study showed that Japanese have higher values on the Eating Disorder Inventory than Germans, which shows a contradiction to most of the results of past studies. Most countries of Asia are changing culturally, politically and economically; therefore, the tendency toward and the prevalence of eating disorders and the succeeding psychological pathology in East Asia are expected to change as well. Nevertheless, it is not yet known exactly why eating disorders in East Asia have rapidly increased, or what the similarities and differences of the influencing factors in Western societies and Asia are. Thus, it is necessary to further compare disordered eating pathologies in the West, for example, comparing Germany with Asian countries such as Korea.

2.3.7. Summary

Overall, eating disorders are increasing in non-Western countries and in non-Westerners. East Asians have also reported increased eating disorders with the influence of Western cultures as a suggested factor in the increase of eating disorders in non-Western countries. For instance, the thin-ideal and the unattainable beauty-ideal of Western culture were considered to be an achievement in non-Western societies. In such economically developing countries, the desire of individuals to be thin can increase body dissatisfaction which leads to further disordered eating symptoms. Additionally, the individualistic culture with the concept of independent self in Germany and the collectivistic culture with the concept of interdependent self in Korea may lead to different perceptions and different ways of expressing emotion, behavior or cognition in each individual which can influence the levels of satisfaction with one's body or shape. Cross-cultural studies have reported results comparing some of the risk factors and rates of eating disorders of diverse ethnic groups. However, more research is needed to compare processes and functions of various factors of eating disorders between diverse ethnic groups in the future.

3. Hypotheses

Eating disorders are amongst the fastest growing psychological disorders in current societies. Many risk factors of eating disorders have been subject to research in various ethnic groups. In spite of that, it is still unclear and unknown why eating disorders increase rapidly in non-Western populations and in males. The question remains, whether or not some risk or maintenance factors of eating disorders play comparable roles in Western and non-Western cultures. In a similar vein it can be asked how the relationship between disordered eating pathology and cultural influences is affected, and who is more susceptible to eating disorders within a similar cultural condition or environment? Therefore, in order to understand eating disorders better and to design treatment programs, more cross-cultural studies are needed to examine comparable variables and potential risk factors of eating disorders in different cultures and societies and to develop new or adapt existing treatment methods regarding their specific cultural implications.

The current cross-cultural study was focused on the interaction and relationship of several variables in regard to disordered eating symptoms amongst German and Korean college students. Variables of interest for the current study were body shame, social appearance anxiety, body checking behavior and body dissatisfaction, which are presumed to be closely interrelated and are related to disordered eating behaviors. It is known from several studies that negative emotion influences and maintains disordered eating behaviors in Western samples (e.g., Stice et al., 1996; Hilbert et al., 2007). In addition, body checking behavior is an important behavioral factor in eating disorders, and it has recently been examined in Western societies (e.g., Shafran et al., 2007). There were a few cross-cultural studies in this field between Korean and American students, but to my knowledge, no cross-cultural study between German and Korean college students has been done. However, recent studies on eating disorders in Korea have reported, in spite of the smaller body mass index of Koreans in comparison to Americans, increasing disordered eating behaviors and similar levels of body dissatisfaction (e.g. Jung et al., 2007; Jackson et al., 2006). Therefore, it can be assumed

in the current study that Koreans show high levels of body shame, social appearance anxiety, body checking behavior, body dissatisfaction and disordered eating behaviors.

In the current study, the differences in the effects of the cultures of Germany and Korea on the people were assumed to be based on the concepts of individualism and collectivism of cultural psychology (Triandis, 1990). Germany is considered to be an individualistic society, while Korea is labeled as being a collectivistic society similar to other East Asian countries (e.g., China or Japan). The individuals in each society can be influenced in many ways by their cultures and cultural changes (Markus et al., 1991). Thus, the different effects of each culture were expected to be related to the roles of body shame, social appearance anxiety and body checking behavior. In particular, the coexistence of traditional culture and Western culture in Korea may produce more conflicting situations in relation to disordered eating behaviors involving emotional and behavioral components. Therefore, it was assumed in the current study that the rates of the variables of body shame, social appearance anxiety and body checking behavior are probably higher in Koreans than in Germans.

When considering the design of structural equation models for the examination of different interactions of variables, results of previously empirical studies in this field of eating disorders supported the theoretical background of hypothesized structural models. Previous empirical studies show that body dissatisfaction is an important risk factor for development of eating disorders (Stice et al., 1998; Thompson et al., 1999; Garner, 2002; Jacobi et al., 2004) and body checking behavior increases body dissatisfaction leading to eating disorders (Shafran et al., 2007; Williamson et al., 1999; Fairburn et al., 2003). Moreover, body shame predicts disordered eating symptoms and plays a role in the relationship between body dissatisfaction and eating disorders (Sanftner et al., 1995; Burney et al., 2000). In addition, body dissatisfaction predicts social appearance anxiety which is an influential factor in eating disorders (Hausenblase et al., 1999; Hart et al., 2008). Empirical studies show the relationships among variables of body shame, social appearance anxiety, body checking behavior, body dissatisfaction and disordered eating behaviors. According to the sociocultural model by Stice et al. (1996), the pathway model from ideal body internalization through body dissatisfaction, negative affect and dietary restraint to bulimia was supported in Western samples. The current study

adopted this possible pathway from body dissatisfaction through negative affect to bulimia, and in this process body checking behavior was added as an influential factor leading to body dissatisfaction, while the negative affect was defined, in relation to the body, as body shame and social appearance anxiety, and the dependent variable was disordered eating behaviors.

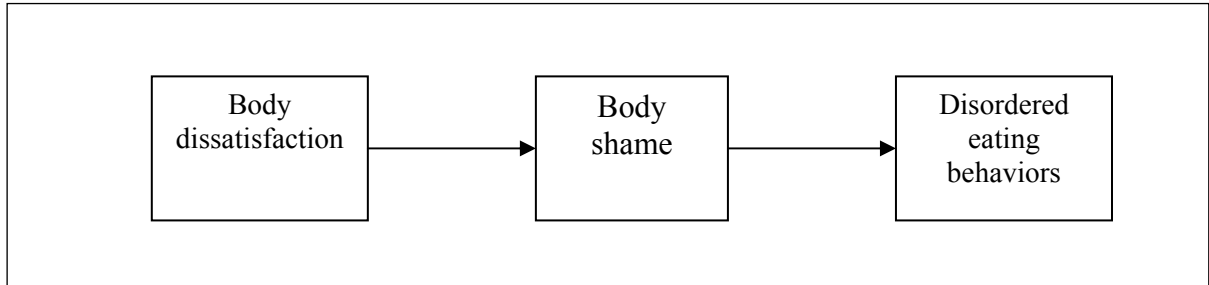
Therefore, the hypothesized pathway models were designed in basically three types (see Figure 1). The first one was the path from body dissatisfaction with body shame as a mediator leading to disordered eating behaviors. The second path model was from body checking behavior to body dissatisfaction, which predicts that body shame leads to disordered eating behaviors. The last path model was the same as the second type of path model, but the role of the variable of social appearance anxiety was added. Disordered eating behaviors as a dependent variable are composed of three subscales; drive for thinness, bulimia symptoms, and body dissatisfaction of the EDI-2 short form (Eating Disorder Inventory 2; Garner, 1991) and each variable will be investigated.

The hypotheses of the current study are:

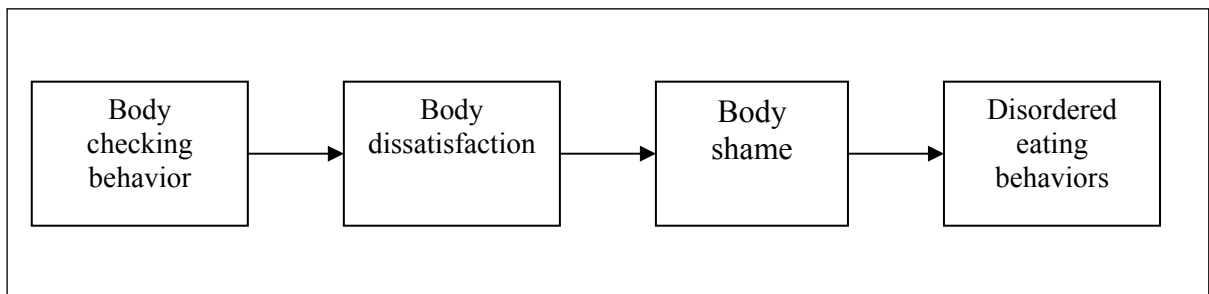
1. There is a difference in body dissatisfaction and disordered eating behaviors between Germans and Koreans. In both, women and men groups, the levels of the measurements of body dissatisfaction and disordered eating behaviors in Korea are higher, despite an expected lower Body Mass Index of Koreans compared to Germans.
2. Body checking behavior, body shame, and social appearance anxiety rate higher in both Korean women and men groups than in German women and men groups.
3. The roles of body shame, social appearance anxiety and body checking behavior on disordered eating behaviors and body dissatisfaction in Korean participants are different than that of German participants.

Figure 1. Three types of hypothesized path model

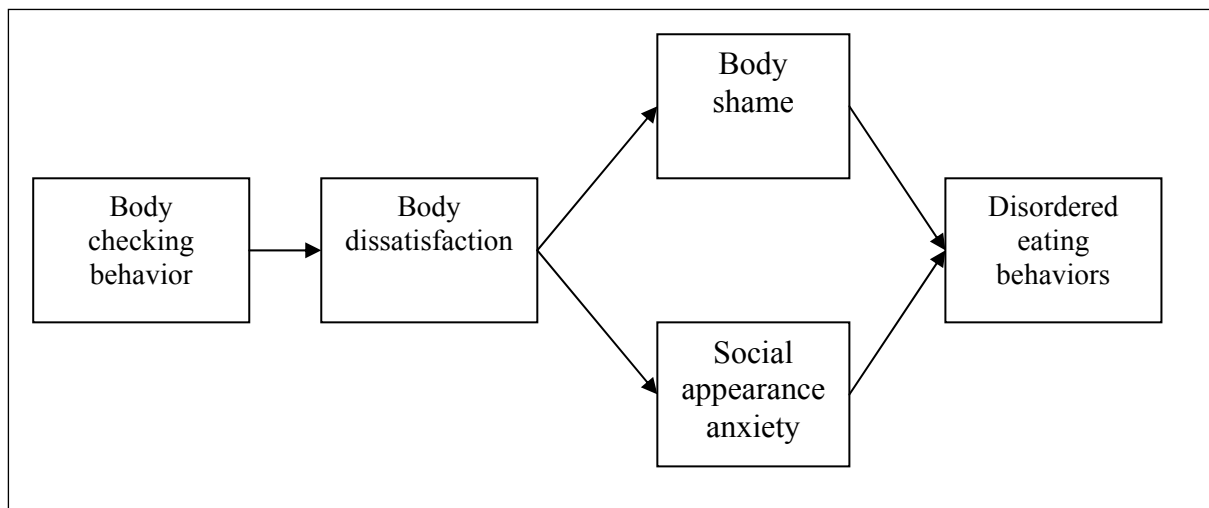
First type of pathway



Second type of pathway



Third type of pathway



4. Methods

4.1. Participants and Procedures

The data was collected between September 10th and September 30th 2008 in Korea and from November 3rd 2008 to February 16th 2009 in Germany. 481 data from the universities in Seoul and the Gangwon province of South Korea and 384 data in Freiburg, Germany were collected. Those, who reported more than one ethnic identity and who did not complete questionnaires were excluded. All participating Koreans were of Korean ethnicity. German group included 3 Luxembourgers, 1 Russian, 1 Frenchman, 1 Moroccan, 1 American, 1 Romanian, 1 Dutchman, 1 Pole and 1 Swiss. These 11 participants were not considered part of the German group. Altogether, 810 data were analyzed in the current study: 324 females and 136 males in Korea; 266 females and 84 males in Germany.

The age of participants ranged from 17 to 35 years in Korea (Koreans: $M = 21.90$, $SD = 3.64$; women: $M = 22.04$, $SD = 3.78$; men: $M = 21.59$, $SD = 3.30$) and from 18 to 48 years in Germany (Germans: $M = 23.36$, $SD = 4.62$; women: $M = 23.14$, $SD = 4.70$; men: $M = 24.07$, $SD = 4.34$).

Some scales which were used for the current study were not published in German or in the Korean language. These materials were translated into German or into Korean by the author and three other bilingual persons who were living in and were very familiar with both cultures. Translated materials were translated back into English by three bicultural graduates. These translated materials were evaluated for internal consistency, item correlation and factor analyses to ensure their validity.

Data was collected in lectures in universities of both countries. Students willing to attend this study received the questionnaire, took it home and handed it in after one week. There were 210 items from 7 scales including questions about demographics as well as height and weight to assess the Body Mass Index. Overall time to respond to all items was about 30 minutes.

4.2. Measures

4.2.1. Body Mass Index

Participants reported their height and weight to assess their Body Mass Index. *Body Mass Index* (BMI) calculates weight in kilograms divided by the square of height in meters (kg/m^2) and is used to classify as underweight, overweight and obese. $\text{BMI} \geq 30.00$ indicates obesity, $\text{BMI} \geq 25.00$ overweight, $\text{BMI} = 18.50 - 24.99$ defines the normal range, BMI lower than 18.50 is considered as underweight (World Health Organization; WHO, 2004).

4.2.2. Disordered Eating Behaviors

The Eating Disorder Inventory 2 (EDI-2; Garner, 1991) is based on the Eating Disorder Inventory (EDI; Garner, Olmsted, & Polivy, 1983). It consists of 64 items and 8 subscales to assess pathological behavior and attitudes related to anorexia and bulimia nervosa (Garner, 1991). The 8 subscales of the EDI are (1) drive for thinness, (2) bulimia, (3) body dissatisfaction, (4) ineffectiveness, (5) perfectionism, (6) interpersonal distrust, (7) interoceptive awareness, and (8) maturity fears. Garner (1991) developed the EDI-2 from the EDI by adding 27 items in three new subscales: (1) asceticism, (2) impulse regulation, and (3) social insecurity. The EDI-2 is a self-report inventory measure with 91 items of 11 subscales and is rated on a scale from 1 (never) to 6 (always). Additionally, the EDI-2 has good reliability and validity values and is one of the most-used self-report measures for the assessment of eating disorders. For example, the study on test-retest reliability of the EDI-2 in inpatients with eating disorders showed a range of .81 to .89 of test-retest reliabilities (Thiel & Paul, 2006).

As a short form of the EDI-2, the three subscales of the EDI-2 have often been used to assess disordered eating attitudes in clinical and non-clinical research; Drive for

Thinness (DT), Bulimia (B) and Body Dissatisfaction (BD). In the current study, these three subscales were used to assess disordered eating behaviors. For the German students in the current study, the German EDI-2 version by Thiel and Paul (Paul & Thiel, 2005) was applied, which showed sufficient internal consistencies for three subscales DT, B, and BD, with Cronbach's α values between .88 and .93 (Paul et al., 2005). For the Korean participants the Korean EDI-2 version was used, with a Cronbach's α ranging from .73 to .87 in college students (Lee & Oh, 2004).

4.2.3. Body Dissatisfaction

The Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987) is a self-report measure to assess concerns about body shape, specifically the experience of feeling fat (Cooper et al., 1987). The items were constructed from semi-structured interviews with women including patients with anorexia nervosa and bulimia nervosa. This scale provides means to investigate the role of concerns about body shape in the development and treatment of anorexia nervosa and bulimia nervosa (Cooper et al., 1987). The BSQ consists of 34 items to assess dissatisfaction with one's body shape and weight during the past 4 weeks and is rated on a scale from 1 (never) to 6 (always). It has good test-retest reliability and validity (Cooper et al., 1987), has been used in many studies on body dissatisfaction and is also generally recommended for assessing eating disorder pathology in clinical settings (e.g., Bunnell, Cooper, Hertz, & Shenker, 1992; Dowson & Henderson, 2001).

The items of the BSQ were developed by women for women. That is, the scale is qualified for females, especially with the addition of three items: items 9, 12 and 25, explicitly refer to 'women' (e.g., 'Has being with thin women made you feel self-conscious about your shape?'). Therefore, the BSQ has often been used to measure body dissatisfaction in female groups. However, the BSQ has been used also for male groups in studies (e.g., Russel et al., 2002; Cooper 2006). Thus, male participants in the current study used the word 'men' instead of the word 'women' in these three items in the BSQ scale. The German BSQ version was used by Pook, Tuschen-Caffier and Stich

(2002), while the Korean version was used by Noh and Kim (2005) with a Cronbach's α of .95 in college students.

4.2.4. Body Checking Behavior

The Body Checking Questionnaire (BCQ; Reas, Whisenhunt, Netemeyer, & Williamson, 2002) is a 23-item inventory to assess body checking behaviors. Each item is rated on a 5-point Likert scale ranging from 1 (never) to 5 (very often). Higher scores on the BCQ were associated with more intense body dissatisfaction, fear of fatness, body image avoidance behaviors, and general eating disturbances (Reas et al., 2002). The BCQ has acceptable reliability and validity and consists of three subscales: (1) overall appearance, (2) specific body parts, and (3) idiosyncratic checking (Reas et al., 2002).

The BCQ proves to be a useful clinical instrument in the assessment and treatment of eating disorders (Vocks, Moswald, & Legenbauer, 2008). In the current study, a German version by Vocks, Moswald and Legenbauer (2008) was used with an internal consistency ranging from .90 to .95 in women with and without eating disorders, while the Korean participants used an English version of the BCQ that was translated into Korean.

4.2.5. Body Shame

Two scales were used to measure body shame. The first scale of body shame focuses on the internalized body shame, and the second scale assesses interpersonal aspects of body shame.

First, *The Body Shame subscale of the Objectified Body Consciousness Scale* (OBCS; McKinley & Hyde, 1996) consists of 8 items and measures shame experienced when internalized cultural body standards are not met (McKinley et al., 1996). This scale is based on the Self Objectification Theory and suggests that body shame mediates the link between internalization and the severity of symptoms of eating disorders (Noll

& Fredrickson, 1998; Calogero, Davis, & Thompson, 2005; Moradi, Dirks, & Matteson, 2005). Items are rated on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree) with higher scores indicating a higher level of body shame. The test-retest reliability of the body shame subscale is .79 in the English version. For the current study, the OBCS Korean version was the OBCS by Kim, Ryu and Park (2007) with Cronbach's α .79 in female college students and .75 in male college students. For the German participants the OBCS was translated into German.

The second scale for the assessment of body shame is *The Body shame subscale of the Weight- and Body-Related Shame and Guilt Scale* (WEB-SG; Conradt, Dierk, Schlumberger, Rauh, Hebebrand, & Rief, 2007) which has been developed to measure feelings of shame and guilt separately in obese individuals in Germany. This body shame subscale consists of 6 items and assesses the frequency of experiencing shame concerning the body, figure and weight in front of real and imagined others (Conradt, Dierk, Rauh, Hebebrand, & Rief, 2008). Because this scale is based on obesity, the author of the test was first contacted and he responded that the scale can also be used with non-obese individuals. It is rated on a 5-point Likert scale ranging from 1 (not at all) to 5 (always), an alpha coefficient of .92 involving 6 items of the body shame subscale and a test-retest reliability of .76 in the German version (Conradt et al., 2007). For the Korean participants it was translated into Korean.

4.2.6. Social Appearance Anxiety

The Social Appearance Anxiety Scale (SAAS; Hart, Flora, Palyo, Fresco, Holle, & Heimberg, 2008) is a 16-item self-report inventory which assesses anxiety of situations regarding overall appearance in respect to one's body shape (Hart et al., 2008). The scale provides a good internal consistency ($\alpha = .94$), a high reliability (test-retest reliability $r = .84$) and good construct validity (Hart et al., 2008). The rate is the level of agreement on a 5-point Likert scale ranging from 1 (not at all) to 5 (extremely). Higher scores on the SAAS relate to a greater disparity between self-reported actual and ideal physical attributes, dysfunctional schemes about the importance and meaning of

appearance, feelings of unattractiveness, emphasis on appearance and its maintenance, and a preoccupation with being or becoming overweight (Hart et al., 2008). The SAAS is a relatively new scale, thus in the current study it was translated into Korean and into German.

4.2.7. Psychological Symptoms

To investigate possible relationships between psychological problems and disordered eating attitudes the Symptom Check-List-90-R was applied. *The Symptom Check-List-90-R* (SCL-90-R) is a 90 item multidimensional questionnaire consisting of 83 items of 9 primary symptom dimensions and 7 other items designed to screen for a broad range of psychological disorders. Each of the items is rated on a 5-point Likert scale of distress, ranging from 0 (not at all) to 4 (extremely). The SCL-90-R is an established instrument in clinical settings and many studies showed good reliability and validity. SCL-90 R in its German version was used by Franke (2002), the Korean version by Kim, Kim and Won (1984).

4.3. Data Analyses

For data analysis the SPSS (version 16.0 in English) and AMOS 7 were used. The means and the standard deviations of age, body mass index and other variables in the current study were calculated. They compared the significant differences of data in both countries' samples using t-values, and the main effects of country, gender and their interactions with the measures of body checking, body shame, social appearance, body dissatisfaction, and disordered eating attitudes were investigated employing a multivariate data analysis. In order to examine the validity of the translated scales, factor analysis of the SPSS program was used. The acceptable level of factor analysis was decided by the Kaiser-Meyer-Olkin-Kriterium's minimum value of 0.5 (Cureton, & D'Agostino, 1983). The Scree-test and the results of factor loading using Varimax rotation were used as criteria for determining the number of factors. Factor analysis can be useful to confirm the construction of translated scales and to compare the groups of both countries in the current study. Additionally, Chronbach's alphas were reported to verify the reliabilities of the instruments.

Structural equation modeling was used to determine the relationship among variables. Specifically, the roles of body checking behavior, social appearance anxiety and body shame in relation to disordered eating behavior and body dissatisfaction. Structural equation modeling is often used for testing causal relationships or combinations of statistical data. It is suited for testing theory or to develop theory (Byrne, 2001). The criteria of fit indices are important in order to accept models. Some important fit indices such as Chi-Square, Goodness of Fit Index, Root Mean Square Error of Approximation or Parsimony Normed Fit Index should be reported in a scientific study (McDonald & Ho, 2002). According to this recommendation, the fit indices of Chi-Square, Relative Chi-Square (CMIN/DF), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Tucker and Lewis Index (TLI), Parsimony Normed Fit Index (PNFI), and Root Mean Square Error of Approximation (RMSEA) were used on the results of the current study. The suggested cutoff values of fit indices are between 5.0 and 2.0 for Chi-Square; however,

it is influenced by the sample size. Therefore, it is recommended to consider CMIN/DF with a value less than 3.0 (Tabachnick & Fidell, 2007). Additionally, acceptable cutoff values for structural modeling are above 0.90 for GFI, AGFI, CFI, and TLI, above 0.05 for PNFI, and below 0.07 or 0.08 for RMSEA (Byrne, 2001; Steiger, 2007). Therefore, these criteria were followed for the structural equation model testing of the current study.

5. Results

5.1. Sample Description

Participants were 266 women and 84 men in Germany, and 324 women and 136 men in Korea. The age of participants ranged from 18 to 48 years in Germany (Germans: $M = 23.36$, $SD = 4.62$; women: $M = 23.14$, $SD = 4.70$; men: $M = 24.07$, $SD = 4.34$) and from 17 to 35 years in Korea (Koreans: $M = 21.90$, $SD = 3.64$; women: $M = 22.04$, $SD = 3.78$; men: $M = 21.59$, $SD = 3.30$). The mean of the ages of the German group was significantly higher (total: $t = -5.02$, $df = 808$, $p < .001$; women: $t = -3.16$, $df = 588$, $p < .05$; men: $t = -4.80$, $df = 218$, $p < .001$) than that of the Korean group. 57.5 % of German women and 53.6 % of German men had a partner, while 46.3 % of Korean women and 39.7 % of Korean men had a partner (see Table 1). There was a significant difference between German and Korean females in their family status ($\chi^2 = 13.42$, $df = 5$, $p = 0.02$), whereas there was no significant difference between German and Korean males in regard to their family status ($\chi^2 = 5.44$, $df = 4$, $p = 0.25$).

Table 1. Family Status of the Participants

| Country | Gender | Family status | Frequency | Percent (%) | Cumulative % |
|---------|-----------------------------|-------------------------|-----------|-------------|--------------|
| Germany | Women (<i>N</i> = 266) | single with partner | 142 | 53.4 | 53.4 |
| | | single without partner | 110 | 41.4 | 94.7 |
| | | married with partner | 11 | 4.1 | 98.9 |
| | | married without partner | 2 | 0.8 | 99.6 |
| | | divorced | 1 | 0.4 | 100.0 |
| | Men (<i>N</i> = 84) | single with partner | 42 | 50.0 | 50.0 |
| | | single without partner | 39 | 46.4 | 96.4 |
| | | married with partner | 3 | 3.6 | 100.0 |
| | | | | | |
| | | | | | |
| Korea | Women (<i>N</i> = 324) | single with partner | 129 | 39.8 | 39.8 |
| | | single without partner | 171 | 52.8 | 92.6 |
| | | married with partner | 21 | 6.5 | 99.1 |
| | | married without partner | 2 | 0.6 | 99.7 |
| | | widowed | 1 | 0.3 | 100.0 |
| | Men (<i>N</i> = 136) | single with partner | 51 | 37.5 | 37.5 |
| | | single without partner | 79 | 58.1 | 95.6 |
| | | married with partner | 3 | 2.2 | 97.8 |
| | | married without partner | 1 | 0.7 | 98.5 |
| | | divorced | 2 | 1.5 | 100.0 |

4.5 % of women participants and 2.4 % of men participants in Germany had children, whereas 5.0 % of women participants and 2.2 % of men participants in Korea had children (see Table 2). There were no significant differences between German and Korean females or between German and Korean males related to number of children (women: $\chi^2 = 1.84$, $df = 3$, $p = 0.61$; men: $\chi^2 = 0.86$, $df = 2$, $p = 0.65$).

Table 2. Number of Children of the Participants

| Country | Gender | Number of children | Frequency | Percent (%) | Cumulative |
|---------|----------------------------|--------------------|-----------|-------------|------------|
| | | | | | Percent |
| Germany | Women (<i>N</i> = 266) | 0 | 254 | 95.5 | 95.5 |
| | | 1 | 3 | 1.1 | 96.6 |
| | | 2 | 8 | 3.0 | 99.6 |
| | | 3 | 1 | 0.4 | 100.0 |
| | Men (<i>N</i> = 84) | 0 | 82 | 97.6 | 97.6 |
| | | 1 | 2 | 2.4 | 100.0 |
| Korea | Women (<i>N</i> = 324) | 0 | 308 | 95.1 | 95.1 |
| | | 1 | 8 | 2.5 | 97.5 |
| | | 2 | 7 | 2.2 | 99.7 |
| | | 3 | 1 | 0.3 | 100.0 |
| | Men (<i>N</i> = 136) | 0 | 133 | 97.8 | 97.8 |
| | | 1 | 2 | 1.5 | 99.3 |
| | | 2 | 1 | 0.7 | 100.0 |

In addition, 3 German women and 2 German men were homosexual, and 5 women and 1 man in Germany were bisexual. In Korea 2 women and 3 men were homosexual, and 7 women and 1 man had bisexual orientation (see Table 3). There were no significant differences between German and Korean females ($\chi^2 = 0.51$, $df = 2$, $p = 0.78$), or between German and Korean males ($\chi^2 = 0.13$, $df = 2$, $p = 0.94$) in the three types of sexual orientations.

Table 3. Sexual Orientation of the Participants

| Country | Gender | Sexual orientation | Frequency | Percent (%) | Cumulative Percent |
|---------|--------------------|--------------------|-----------|-------------|--------------------|
| Germany | Women (N = 266) | heterosexual | 258 | 97.0 | 97.0 |
| | | homosexual | 3 | 1.1 | 98.1 |
| | | bisexual | 5 | 1.9 | 100.0 |
| | Men (N = 84) | heterosexual | 81 | 96.4 | 96.4 |
| | | homosexual | 2 | 2.4 | 98.8 |
| | | bisexual | 1 | 1.2 | 100.0 |
| Korea | Women (N = 324) | heterosexual | 315 | 97.2 | 97.2 |
| | | homosexual | 2 | 0.6 | 97.8 |
| | | bisexual | 7 | 2.2 | 100.0 |
| | Men (N = 136) | heterosexual | 132 | 97.1 | 97.1 |
| | | homosexual | 3 | 2.2 | 99.3 |
| | | bisexual | 1 | 0.7 | 100.0 |

5.2. Means and Standard Deviations

The Body Mass Index (BMI) ranged from 16.94 to 36.05 and from 15.01 to 30.85 in German and Korean participants, respectively. The BMI in Germans was significantly higher than in Koreans (Germans: $N = 350$, $M = 22.10$, $SD = 3.02$; Koreans: $N = 460$, $M = 21.36$, $SD = 3.05$; $t = -3.41$, $df = 808$, $p = 0.001$). In particular, the BMI ranged from 16.94 to 36.05 and from 15.24 to 30.85 in German and Korean women, respectively. The BMI in Korean women ($N = 324$, $M = 20.62$, $SD = 2.64$) was significantly lower than in German women ($N = 266$, $M = 21.92$, $SD = 3.06$, $t = -5.51$, $df = 588$, $p < 0.001$). The BMI in German men was between 17.08 and 31.89 and the BMI in Korean men was between 15.01 and 29.41. There was no significant difference in BMI between the male groups of both countries (German men: $N = 84$, $M = 22.66$, $SD = 2.85$; Korean men: $N = 136$, $M = 23.12$, $SD = 3.23$; $t = 1.07$, $df = 218$, $p = 0.29$).

Table 4. Means and Standard Deviations of the Body Mass Index (BMI)

| | Germany | | | | | | Korea | | | | | |
|------------|-------------|-----------|-------------|-----------|------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
| | Germans | | Women | | Men | | Koreans | | Women | | Men | |
| | $(N = 350)$ | | $(N = 266)$ | | $(N = 84)$ | | $(N = 460)$ | | $(N = 324)$ | | $(N = 136)$ | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| BMI | 22.10 | 3.02 | 21.92 | 3.06 | 22.66 | 2.85 | 21.36 | 3.05 | 20.62 | 2.64 | 23.12 | 3.23 |

Additionally, Table 5 shows the percentage of the BMI in women and men for both countries.

Table 5. Percentage of Body Mass Index (BMI)

| Classification | BMI | Germany | | Korea | |
|---------------------|----------------------|----------------------|-------------------|----------------------|--------------------|
| | | Women $(N = 266)$ | Men $(N = 84)$ | Women $(N = 324)$ | Men $(N = 136)$ |
| Underweight | < 18.50 | 5.3 % | 3.6 % | 21.3 % | 5.1 % |
| Normal range | 18.50 - 24.99 | 83.1 % | 82.1 % | 71.0 % | 64.8 % |
| Overweight | >= 25.00 | 8.4 % | 10.7 % | 7.1 % | 30.1 % |
| Obese | >= 30.00 | 3.2 % | 3.6 % | 0.6 % | 0 % |

The mean scores of all variables of body shame, social appearance anxiety, disordered eating behaviors, body dissatisfaction and body checking behavior in Koreans were significantly higher than in Germans (see Table 6).

Table 6. Means and Standard Deviations of All Scales by Ethnic Group

| | Germans | | Koreans | | t-test | df |
|----------------|----------|-----------|----------|-----------|----------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>t</i> | <i>df</i> |
| BSOBCS | 18.86 | 6.38 | 26.22 | 6.92 | 15.51 | 808 |
| BSWEBSG | 4.29 | 4.53 | 5.73 | 5.28 | 4.19 | 796.27 |
| SAAS | 30.56 | 11.16 | 36.09 | 14.42 | 6.15 | 807.75 |
| EDI-2 | 56.52 | 18.80 | 75.71 | 18.64 | 14.46 | 808 |
| BSQ | 69.47 | 27.17 | 100.22 | 35.69 | 13.92 | 808 |
| BCQ | 38.54 | 10.60 | 49.47 | 19.35 | 10.26 | 740.87 |

Note. $P < .001$ BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale (McKinly, et al., 1996); BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale (Conradt et al., 2008); SAAS = The Social Appearance Anxiety Scale (Hart et al., 2008); EDI-2 = The Eating Disorder Inventory 2 (Garner, 1991); BSQ = The Body Shape Questionnaire (Cooper et al., 1987); BCQ = The Body Checking Questionnaire (Reas et al., 2002).

Means and standard deviations from all variables of the 6 scales from gender are also presented in Table 7. The mean scores of all scales in each gender of Koreans were also significantly higher than in each gender from Germany (see Table 7).

Table 7. Means and Standard Deviations of All Scales by Each Gender Group

| Scales | Germany | | | | Korea | | | | t-test | |
|----------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|----------|
| | Women | | Men | | Women | | Men | | Women | Men |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>t</i> | <i>t</i> |
| BSOBCS | 19.52 | 6.62 | 16.77 | 5.04 | 26.67 | 6.98 | 25.16 | 6.67 | 12.67 | 10.57 |
| BSWEBSG | 4.94 | 4.71 | 2.21 | 3.12 | 6.03 | 5.09 | 5.01 | 5.65 | 2.69* | 4.73 |
| SAAS | 31.59 | 11.40 | 27.29 | 9.72 | 35.99 | 14.06 | 36.32 | 15.29 | 4.20 | 5.35 |
| EDI-2 | 60.03 | 18.46 | 45.40 | 15.31 | 79.38 | 17.79 | 66.97 | 17.74 | 12.92 | 9.54 |
| BSQ | 74.67 | 27.08 | 53.01 | 20.04 | 107.66 | 32.32 | 82.49 | 37.16 | 13.49 | 7.63 |
| BCQ | 40.30 | 10.38 | 32.98 | 9.34 | 52.38 | 18.39 | 42.54 | 19.87 | 10.03 | 4.82 |

Note. $P < .001$ * $P = .007$ BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale (McKinly, et al., 1996); BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale (Conradt et al., 2008); SAAS = The Social Appearance Anxiety Scale (Hart et al., 2008); EDI-2 = The Eating Disorder Inventory 2 (Garner, 1991); BSQ = The Body Shape Questionnaire (Cooper et al., 1987); BCQ = The Body Checking Questionnaire (Reas et al., 2002).

MANOVA showed that there was a significant multivariate effect for all variables of country (Wilks' Lambda: $F(6, 801) = 4.539, p < 0.001, \eta^2 = 0.281$), gender (Wilks' Lambda: $F(6, 801) = 4.539, p < 0.001, \eta^2 = 0.148$), and country * gender interaction (Wilks' Lambda: $F(6, 801) = 4.539, p < 0.001, \eta^2 = 0.033$) (see Table 8).

Table 8. Multivariate Tests (b)

| Effect | Value | F | Hypothesis | | Sig. | Partial Eta Squared | |
|-------------------------|--------------------|------|------------|----------|------|---------------------------|------|
| | | | df | Error df | | | |
| country | Pillai's Trace | .281 | 52.269(a) | 6 | 801 | .000 | .281 |
| | Wilks' Lambda | .719 | 52.269(a) | 6 | 801 | .000 | .281 |
| | Hotelling's Trace | .392 | 52.269(a) | 6 | 801 | .000 | .281 |
| | Roy's Largest Root | .392 | 52.269(a) | 6 | 801 | .000 | .281 |
| gender | Pillai's Trace | .148 | 23.129(a) | 6 | 801 | .000 | .148 |
| | Wilks' Lambda | .852 | 23.129(a) | 6 | 801 | .000 | .148 |
| | Hotelling's Trace | .173 | 23.129(a) | 6 | 801 | .000 | .148 |
| | Roy's Largest Root | .173 | 23.129(a) | 6 | 801 | .000 | .148 |
| country * gender | Pillai's Trace | .033 | 4.539(a) | 6 | 801 | .000 | .033 |
| | Wilks' Lambda | .967 | 4.539(a) | 6 | 801 | .000 | .033 |
| | Hotelling's Trace | .034 | 4.539(a) | 6 | 801 | .000 | .033 |
| | Roy's Largest Root | .034 | 4.539(a) | 6 | 801 | .000 | .033 |

Note. a Exact statistic. b Design: Intercept+country+gender+country * gender

The individual ANOVAs with respect to country, gender and country * gender as between-subject variables applied to each dependent variable separately and showed a significantly higher effect of country and gender for all variables – body shame (internalized, interpersonal), disordered eating behavior, body dissatisfaction and body checking behavior - of Korean participants than of German participants, with the exception of the effect of gender on the social appearance anxiety variable (see Table 9). The effect of country * gender interaction was only shown to have higher values for social appearance anxiety ($F(1, 806) = 4.815, p < 0.05, \eta^2 = 0.006$) and interpersonal body shame ($F(1, 806) = 4.642, p < 0.05, \eta^2 = 0.006$) in the Korean samples compared to the German samples (see Table 9, Figure 2 and Figure 3).

Table 9. Tests of Between-Subjects Effects

| Source | Dependent Variable | <i>df</i> | F | Sig. | Partial Eta Squared |
|-------------------------|--------------------|-----------|---------|------|---------------------|
| country | BSOBCS | 1 | 210.154 | .000 | .207 |
| | EDI-2 | 1 | 203.053 | .000 | .201 |
| | SAAS | 1 | 40.434 | .000 | .048 |
| | BSQ | 1 | 160.352 | .000 | .166 |
| | BSWEBSG | 1 | 24.183 | .000 | .029 |
| | BCQ | 1 | 72.889 | .000 | .083 |
| gender | BSOBCS | 1 | 15.778 | .000 | .019 |
| | EDI-2 | 1 | 88.682 | .000 | .099 |
| | SAAS | 1 | 3.558 | .060 | .004 |
| | BSQ | 1 | 90.115 | .000 | .101 |
| | BSWEBSG | 1 | 22.359 | .000 | .027 |
| | BCQ | 1 | 45.872 | .000 | .054 |
| country * gender | BSOBCS | 1 | 1.341 | .247 | .002 |
| | EDI-2 | 1 | .594 | .441 | .001 |
| | SAAS | 1 | 4.815 | .028 | .006 |
| | BSQ | 1 | .506 | .477 | .001 |
| | BSWEBSG | 1 | 4.642 | .031 | .006 |
| | BCQ | 1 | .985 | .321 | .001 |

Note. BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale (McKinly, et al., 1996); BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale (Conradt et al., 2008); SAAS = The Social Appearance Anxiety Scale (Hart et al., 2008); EDI-2 = The Eating Disorder Inventory 2 (Garner, 1991); BSQ = The Body Shape Questionnaire (Cooper et al., 1987); BCQ = The Body Checking Questionnaire (Reas et al., 2002).

Figure 2. Estimated marginal means of social appearance anxiety

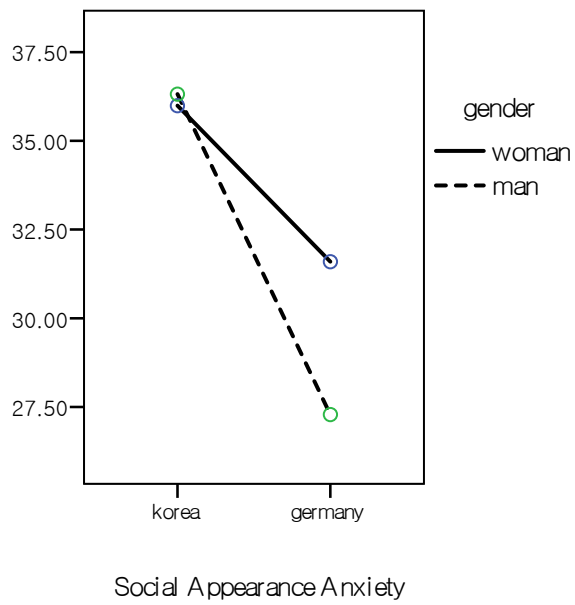
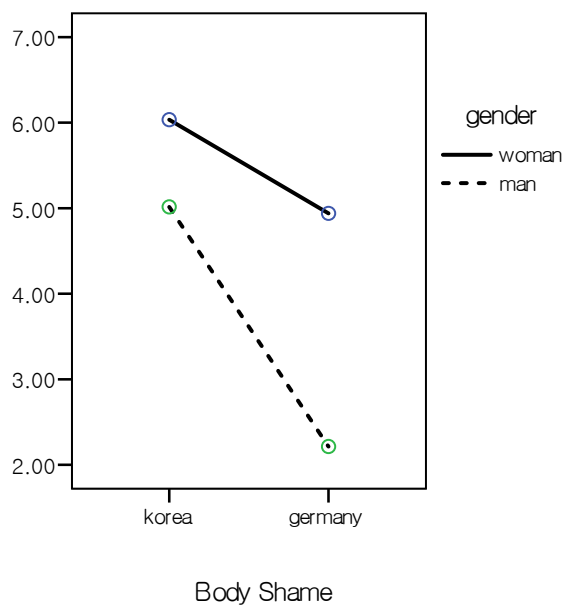


Figure 3. Estimated marginal means of body shame (interpersonal body shame)



5.3. Description of the SCL-90 R

Means and standard deviations of the Symptom Check List-90 R are shown in Table 10. The mean of the SCL-90 R was significantly higher in Korean groups (women: $M = 75.86$, $SD = 57.14$, $t = 6.86$, $df = 556.78$, two-tailed $p < 0.001$; men: $M = 71.24$, $SD = 67.29$, $t = 5.40$, $df = 193.09$, two-tailed $p < 0.001$) than in German groups (women: $M = 49.07$, $SD = 37.07$; men: $M = 36.29$, $SD = 26.96$). The Cronbach's alpha of the SCL-90 R showed high reliabilities in both countries, and reliabilities of the subscales of the SCL-90 R have also had good levels of Cronbach's alpha between 0.66 and 0.93 (see Table 10).

Table 10. Means, Standard Deviations, Cronbach's Alphas of the SCL-90 R

| | | Germany | | | | | | Korea | | | | | | | |
|-----------------|-------------|--------------------|-------|----------|-----------------|-------|----------|--------------------|-------|-------|------------------|-------|-------|----------|-------------------|
| | | Women (N = 266) | | | Men (N = 84) | | | Women (N = 324) | | | Men (N = 136) | | | | |
| | | M | SD | α | M | SD | α | Total α | M | SD | α | M | SD | α | Total α |
| SCL-90R | | 49.07 | 37.07 | .96 | 36.29 | 26.96 | .95 | .96 | 75.86 | 57.14 | .98 | 71.24 | 67.29 | .99 | .98 |
| Subscale | Soma | 6.50 | 5.74 | .79 | 3.74 | 4.39 | .79 | .80 | 9.76 | 8.32 | .88 | 9.53 | 9.06 | .90 | .89 |
| | Obse | 7.93 | 5.55 | .80 | 6.80 | 4.74 | .79 | .80 | 12.37 | 7.85 | .86 | 10.57 | 8.25 | .88 | .87 |
| | Inte | 6.27 | 5.56 | .83 | 4.25 | 4.07 | .80 | .83 | 9.11 | 6.85 | .86 | 7.67 | 7.09 | .89 | .87 |
| | Depr | 10.00 | 8.10 | .87 | 7.46 | 6.25 | .86 | .87 | 13.90 | 10.99 | .92 | 11.22 | 11.12 | .93 | .92 |
| | Anxi | 4.46 | 4.66 | .81 | 3.12 | 2.87 | .66 | .80 | 8.02 | 7.44 | .90 | 7.44 | 8.34 | .93 | .91 |
| | Ange | 3.02 | 3.18 | .73 | 2.35 | 2.88 | .75 | .73 | 4.60 | 4.73 | .85 | 4.68 | 4.95 | .85 | .84 |
| | Phob | 1.50 | 2.75 | .76 | .92 | 1.22 | .32 | .73 | 2.62 | 3.57 | .76 | 3.76 | 5.63 | .91 | .84 |
| | Para | 2.51 | 2.92 | .69 | 2.18 | 2.69 | .72 | .70 | 3.98 | 4.42 | .83 | 4.37 | 4.85 | .84 | .83 |
| | Psyc | 2.97 | 3.82 | .74 | 2.82 | 3.71 | .75 | .74 | 6.14 | 6.36 | .86 | 6.63 | 8.18 | .92 | .88 |

Note. SCL90R = Symptom Checklist 90 R; Soma = Somatization; Obse = Obsessive Compulsive; Inte = Interpersonal Sensitivity; Depr = Depression; Anxi = Anxiety; Ange = Anger Hostility; Phob = Phobic Anxiety; Para = Paranoid Ideation; Psyc = Psychoticism.

Furthermore, correlations among 6 scales - the Body Shame subscale of the Objectified Body Consciousness Scale (BSOBCS), the Body Shame subscale of the Weight- and Body related Shame and Guilt Scale (BSWEBSG), the Social Appearance Anxiety Scale (SAAS), the Eating Disorder Inventory 2 (EDI-2), the Body Shape Questionnaire (BSQ) and the Body Checking Behavior (BCQ) - and psychological symptoms of the SCL-90 R were significantly positive between 0.24 and 0.66 at the level of $p < 0.01$ in all groups (see Table 11).

Table 11. Correlations among the SCL-90 R and All Scales

| Scales | Germany | | Korea | |
|----------------|----------------------------|-------------------------|----------------------------|--------------------------|
| | Women (<i>N</i> = 266) | Men (<i>N</i> = 84) | Women (<i>N</i> = 324) | Men (<i>N</i> = 136) |
| | SCL-90 R | | SCL-90 R | |
| BSOBCS | .37** | .40** | .30** | .24** |
| BSWEBSG | .35** | .59** | .43** | .55** |
| SAAS | .43** | .66** | .54** | .53** |
| EDI-2 | .32** | .54** | .32** | .42** |
| BSQ | .41** | .57** | .39** | .53** |
| BCQ | .47** | .57** | .44** | .64** |

Note. ** Correlation is significant at the 0.01 level (2-tailed). SCL-90 R = Symptom Checklist 90 R; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale (McKinly, et al., 1996); BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale (Conradt et al., 2008); SAAS = The Social Appearance Anxiety Scale (Hart et al., 2008); EDI-2 = The Eating Disorder Inventory 2 (Garner, 1991); BSQ = The Body Shape Questionnaire (Cooper et al., 1987); BCQ = The Body Checking Questionnaire (Reas et al., 2002).

5.4. Reliabilities of Measures

The Cronbach's alphas of all scales were between 0.74 and 0.96 in Germans and between 0.76 and 0.97 in Koreans (see Table 12). The Cronbach's alpha reliabilities for the two body shame scales ranged from 0.76 to 0.87 in women of both countries and from 0.58 to 0.89 in male groups of both countries. In both countries the Cronbach's alphas on the Body Shame subscale of the Objectified Body Consciousness Scale (BSOBCS) were the lowest with levels of 0.58 in German males and 0.67 in Korean males. According to Schmitt (1996), Cronbach's alpha of 0.60 or 0.70 is an acceptable reliability and 0.70 or higher indicates a good reliability. The Cronbach's alphas for the 4 scales – social appearance anxiety, disordered eating behavior, body dissatisfaction, and body checking behavior - were over 0.88 in each group. That indicates all scales in the current study have good reliabilities in samples of both countries.

Table 12. Reliabilities of All Scales

| Scales | Germany | | | Korea | | |
|----------------|-------------------------|-----------|----------|-----------|-----------|-----------|
| | Germans | Women | Men | Koreans | Women | Men |
| | (N = 350) | (N = 266) | (N = 84) | (N = 460) | (N = 324) | (N = 136) |
| | Cronbach's Alpha | | | | | |
| BSOBCS | .74 | .76 | .58 | .76 | .80 | .67 |
| BSWEBSG | .87 | .87 | .83 | .86 | .85 | .89 |
| SAAS | .93 | .94 | .93 | .96 | .95 | .96 |
| EDI-2 | .94 | .94 | .92 | .91 | .92 | .88 |
| BSQ | .96 | .96 | .96 | .97 | .96 | .97 |
| BCQ | .89 | .88 | .91 | .95 | .95 | .97 |

Note. BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale (McKinly, et al., 1996); BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale (Conradt et al., 2008); SAAS = The Social Appearance Anxiety Scale (Hart et al., 2008); EDI-2 = The Eating Disorder Inventory 2 (Garner, 1991); BSQ = The Body Shape Questionnaire (Cooper et al., 1987); BCQ = The Body Checking Questionnaire (Reas et al., 2002).

Furthermore, means of inter-item correlations of all scales are presented in Table 13. Social appearance anxiety and interpersonal body shame of the body shame subscale of the Objectified Body Consciousness Scale (BSWEBSG) showed the highest means of inter-item correlations ranging from 0.46 to 0.59 in all sample groups. In males of both countries, the internalized body shame of the BSOBCS had low levels of inter-item correlation with means of 0.18 and 0.21, respectively.

Table 13. Means of the Inter-Item Correlations of All Scales

| Scales | N of items | Germany | | | Korea | | |
|----------------|---------------|----------------------|--------------------|-----------------|----------------------|--------------------|------------------|
| | | Germans (N = 350) | Women (N = 266) | Men (N = 84) | Koreans (N = 460) | Women (N = 324) | Men (N = 136) |
| BSOBCS | 8 | .27 | .30 | .18 | .29 | .34 | .21 |
| BSWEBSG | 6 | .54 | .53 | .49 | .50 | .49 | .57 |
| SAAS | 16 | .48 | .48 | .46 | .57 | .57 | .59 |
| EDI-2 | 23 | .40 | .39 | .37 | .31 | .32 | .27 |
| BSQ | 34 | .43 | .41 | .46 | .46 | .42 | .49 |
| BCQ | 23 | .26 | .24 | .29 | .47 | .43 | .55 |

Note. BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale (McKinly, et al., 1996); BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale (Conradt et al., 2008); SAAS = The Social Appearance Anxiety Scale (Hart et al., 2008); EDI-2 = The Eating Disorder Inventory 2 (Garner, 1991); BSQ = The Body Shape Questionnaire (Cooper et al., 1987); BCQ = The Body Checking Questionnaire (Reas et al., 2002).

5.5. Factor Analysis of Translated Measures

Translated scales (Body shame subscale (BSOBCS) into German, Body shame subscale (BSWEBSG) into Korean, Body checking questionnaire (BCQ) into Korean, Social appearance anxiety scale (SAAS) into German and Korean) for this current study were analyzed applying factor analysis. The results of Varimax rotation, which is the commonly available orthogonal method of rotation, are presented in the appendix. The Kaiser-Meyer-Olkin Measure (KMO) showed between 0.67 and 0.95 for all factor analyses of these four scales in the German and Korean samples ($p < 0.001$). That indicates the data was satisfactory for factor analyses to proceed (Cureton, et al., 1983).

The factor analysis of the SAAS scale in German females and males showed three components with 65.55 % and 65.58 % of total variance explained in each case, while the two factors of the SAAS were extracted with total variance explaining 67.54 % in Korean females and 74.09 % in Korean males. Additionally, the items of the SAAS in each component in the Korean group were similarly extracted from the female and male samples. The BCQ questionnaire for body checking behavior revealed different components for German female and Korean female groups. There were six factors of the BCQ in German females with a total variance explaining 57.43%, while two factors explaining the variance of 52.59 % were extracted in the Korean female group and three components in the Korean male sample. The internalized body shame of the BSOBCS in both male groups showed three factors explaining 59.73 % and 65.43 % of the variance in German males and Korean males, respectively. In addition, two factors of the BSOBCS were extracted in German females explaining 53.69 % of the variance and only one factor was extracted with the explained variance of 43.69 % in Korean females. The interpersonal body shame of the BSWEBSG from all groups showed one component and could not be rotated.

5.6. Correlations among Measures

The correlations among measures in both ethnic groups are presented in Table 14. The results showed that the relationships between the BMI and other scales had significant positive correlations; but the relationships regarding the BMI were not very strong in either sample, and Koreans showed lower correlations between the BMI and other scales than Germans. There were more correlations among variables showing stronger relationships in Germans than in Koreans. In Koreans the relationships between body checking behavior of the BCQ and interpersonal body shame of the BSWEBSG ($r = 0.53, p = 0.01$), between body checking behavior of the BCQ and social appearance anxiety of the SAAS ($r = 0.60, p = 0.01$), and between body checking behavior of the BCQ and body dissatisfaction of the BSQ ($r = 0.80, p = 0.01$) had slightly higher positive correlations than in Germans. Additionally, the correlation between body dissatisfaction of the BSQ and disordered eating behaviors of the EDI-2 showed the highest correlation coefficients overall with 0.88 and 0.85 in German and Korean groups, respectively ($p = 0.01$).

Table 14. Correlations among All Scales by Ethnic Group

| Ethnicity | Scale | BMI | BSOBCS | BSWEBSG | SAAS | EDI-2 | BSQ | BCQ |
|-------------------------------------|----------------|-------|--------|---------|-------|-------|-------|-----|
| Germans (<i>N</i> = 350) | BMI | 1 | | | | | | |
| | BSOBCS | .19** | 1 | | | | | |
| | BSWEBSG | .46** | .64** | 1 | | | | |
| | SAAS | .16** | .64** | .69** | 1 | | | |
| | EDI-2 | .38** | .71** | .74** | .64** | 1 | | |
| | BSQ | .32** | .70** | .75** | .68** | .88** | 1 | |
| | BCQ | .11* | .61** | .58** | .58** | .70** | .79** | 1 |
| Koreans (<i>N</i> = 460) | BMI | 1 | | | | | | |
| | BSOBCS | .13** | 1 | | | | | |
| | BSWEBSG | .29** | .48** | 1 | | | | |
| | SAAS | .17** | .47** | .65** | 1 | | | |
| | EDI-2 | .25** | .56** | .57** | .54** | 1 | | |
| | BSQ | .25** | .60** | .70** | .61** | .85** | 1 | |
| | BCQ | .11** | .53** | .64** | .60** | .68** | .80** | 1 |

Note. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). BMI = Body Mass Index; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale (McKinly, et al., 1996); BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale (Conradt et al., 2008); SAAS = The Social Appearance Anxiety Scale (Hart et al., 2008); EDI-2 = The Eating Disorder Inventory 2 (Garner, 1991); BSQ = The Body Shape Questionnaire (Cooper et al., 1987); BCQ = The Body Checking Questionnaire (Reas et al., 2002).

Table 15 shows the correlations between 6 scales in females and males of both countries. The correlations were significantly positive and showed close relationships ($p = 0.01$). In females of both countries, the most significant positive relationship was between disordered eating behavior of the EDI-2 and body dissatisfaction of the BSQ ($r = 0.86, p = 0.01$). The correlation between disordered eating behavior of the EDI-2 and body dissatisfaction of the BSQ in German males showed the highest correlation coefficient in males of Germany ($r = 0.90, p = 0.01$), while the Korean male group showed the highest significant positive relationship between body dissatisfaction of the BSQ and body checking behavior of the BCQ ($r = 0.81, p = 0.01$). Regarding the correlation of body shame between BSOBCS and BSWEBSG, there was a significant positive relationship between correlation coefficients of 0.32 and 0.63 in all groups ($p = 0.01$). Additionally, the relationships between body dissatisfaction (BSQ) and body checking behavior (BCQ) in females of both countries showed equal levels of correlation ($r = 0.76, p = 0.01$). Furthermore, the associations between body dissatisfaction (BSQ) and body checking behavior (BCQ) in both male groups were equal ($r = 0.81, p = 0.01$). The relationships between body shame of the BSOBCS, social appearance anxiety of the SAAS and body checking behavior of the BCQ in the Korean male group were not very strong compared to other relationships, but were significantly positive (see Table 15). The correlations among BMI and other scales of current study showed relationships with levels between 0.04 and 0.54. The relationship between BMI and SAAS in German males and the relationship between BMI and BSOBCS in Korean males showed weak relationships with levels of 0.06 and 0.04, respectively. The relationship between the BMI and disordered eating behavior of the EDI-2 was significantly correlated in all groups (see Table 15). There was a significant relationship between the correlations from 0.36 to 0.47 from the BMI and body dissatisfaction of the BSQ (see Table 15). Most correlations among the scales in the current study showed significant positive relationships.

Table 15. Correlations among All Scales by Each Gender Group

| Country | Gender | Scale | BMI | BSOBCS | BSWEBSG | SAAS | EDI-2 | BSQ | BCQ |
|---------|--------------------|---------|-------|--------|---------|-------|-------|-------|-----|
| Germany | Women (N = 266) | BMI | 1 | | | | | | |
| | | BSOBCS | .23** | 1 | | | | | |
| | | BSWEBSG | .54** | .63** | 1 | | | | |
| | | SAAS | .21** | .65** | .67** | 1 | | | |
| | | EDI-2 | .44** | .72** | .63** | .63** | 1 | | |
| | | BSQ | .36** | .70** | .72** | .68** | .86** | 1 | |
| | | BCQ | .13* | .60** | .55** | .56** | .66** | .76** | 1 |
| Germany | Men (N = 84) | BMI | 1 | | | | | | |
| | | BSOBCS | .18 | 1 | | | | | |
| | | BSWEBSG | .35** | .59** | 1 | | | | |
| | | SAAS | .06 | .51** | .75** | 1 | | | |
| | | EDI-2 | .43** | .65** | .75** | .66** | 1 | | |
| | | BSQ | .47** | .64** | .74** | .66** | .90** | 1 | |
| | | BCQ | .23* | .56** | .56** | .57** | .71** | .81** | 1 |
| Korea | Women (N = 324) | BMI | 1 | | | | | | |
| | | BSOBCS | .25** | 1 | | | | | |
| | | BSWEBSG | .43** | .55** | 1 | | | | |
| | | SAAS | .22* | .52** | .68** | 1 | | | |
| | | EDI-2 | .41** | .61** | .62** | .59** | 1 | | |
| | | BSQ | .44** | .69** | .73** | .65** | .86** | 1 | |
| | | BCQ | .22** | .62** | .61** | .62** | .63** | .76** | 1 |
| Korea | Men (N = 136) | BMI | 1 | | | | | | |
| | | BSOBCS | .04 | 1 | | | | | |
| | | BSWEBSG | .20* | .32** | 1 | | | | |
| | | SAAS | .11 | .28** | .60** | 1 | | | |
| | | EDI-2 | .41** | .43** | .48** | .52** | 1 | | |
| | | BSQ | .39** | .45** | .67** | .63** | .78** | 1 | |
| | | BCQ | .23** | .29** | .72** | .60** | .59** | .81** | 1 |

Note. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). BMI = Body Mass Index; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale (McKinly, et al., 1996); BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale (Conradt et al., 2008); SAAS = The Social Appearance Anxiety Scale (Hart et al., 2008); EDI-2 = The Eating Disorder Inventory 2 (Garner, 1991); BSQ = The Body Shape Questionnaire (Cooper et al., 1987); BCQ = The Body Checking Questionnaire (Reas et al., 2002).

5.7. Structural Equation Models

The interactions between body checking behavior, body dissatisfaction, body shame, social appearance anxiety and disordered eating symptoms were investigated using the AMOS program (version 7.0 in English). Due to the small sample sizes of men in both countries, only data from the women were included in the path models. Additionally, examinations including the variable of Body Mass Index (BMI) resulted in unconvincing structural equation models in both samples, thus the examination of models including BMI are not presented in the current study. The hypothesized path models were designed in basically three different forms. The first type was the path from body dissatisfaction to body shame as a mediator to disordered eating behaviors including drive for thinness, bulimia symptoms and body dissatisfaction. The second path model goes from body checking behavior leading to body dissatisfaction which predicts body shame leading to disordered eating behaviors, while the last path model started with body checking behavior leading to body dissatisfaction mediated by body shame which predicts disordered eating behaviors and an expected role of social appearance anxiety. Each path model has another three models with the dependent variables of drive for thinness, bulimia symptoms and body dissatisfaction from the disordered eating behaviors of the EDI-2.

Table 16 gives the fit indices for nine examined structural equation models in women of both countries. Model 1 shows the path from body dissatisfaction to drive for thinness with body shame as a mediator. Model 2 shows the path from body dissatisfaction to bulimia symptoms with a body shame variable. Model 3 shows the path from body dissatisfaction of the BSQ to body shame leading to body dissatisfaction of the EDI-2 (see Figures 4, 5, and 6). For all three models body shame was a mediator between body dissatisfaction and disordered eating symptoms. Most of the data from models 1, 2, and 3 showed good fit indices, i.e. between 5.0 and 2.0 for Chi-Square, CMIN/DF with a value below 3.0, a value above 0.90 for GFI, AGFI, CFI, and TLI, a value above 0.05 for PNFI, and a value below 0.07 or 0.08 for RMSEA are usually acceptable to decide on a structural model (Byrne, 2001; Steiger, 2007; Tabachnick et

al., 2007). (see Table 16). However, the root mean square error of approximation (RMSEA) of model 1 showed 0.19 and 0.21 in German females and Korean females, respectively. That indicates that the interaction of variables from model 1 is unconvincing. Because a RMSEA around 0.05 is considered to be a sign of good fit, models with values larger than 0.10 should not be accepted (Blunch, 2008). However, models 2 and 3 in Table 16 showed good χ^2 , and the other fit indices provided a strong predictor of body shame with the relationships between body dissatisfaction and bulimia symptoms and between body dissatisfaction of the BSQ and body dissatisfaction of the EDI-2. In particular, the models 2 and 3 of Korean women showed better fit indices than models 2 and 3 of German women (see Table 16).

Table 16. Fit Indices and χ^2 Comparisons for Models in Women

| Model | Country | Fit Indices | | | | | | | | | |
|----------------|---------|-------------|----|-----|-------------|------|------|------|------|------|-------|
| | | χ^2 | df | p | CMIN/ DF | GFI | AGFI | CFI | TLI | PNFI | RMSEA |
| Model 1 | Germany | 21.36 | 2 | .00 | 10.68 | .97 | .83 | .97 | .92 | .32 | .19 |
| | Korea | 29.09 | 2 | .00 | 14.55 | .96 | .81 | .97 | .90 | .32 | .21 |
| Model 2 | Germany | 3.25 | 2 | .20 | 1.62 | .99 | .96 | 1.00 | .99 | .33 | .07 |
| | Korea | 2.00 | 2 | .37 | 1.00 | 1.00 | .99 | 1.00 | 1.00 | .33 | .00 |
| Model 3 | Germany | 4.46 | 2 | .11 | 2.29 | .99 | .96 | 1.00 | .99 | .33 | .07 |
| | Korea | 3.78 | 2 | .15 | 1.89 | .99 | .97 | 1.00 | .99 | .33 | .05 |
| Model 4 | Germany | 27.40 | 5 | .00 | 5.48 | .96 | .89 | .98 | .95 | .49 | .13 |
| | Korea | 44.92 | 5 | .00 | 8.98 | .95 | .85 | .96 | .93 | .48 | .16 |
| Model 5 | Germany | 9.76 | 5 | .08 | 1.95 | .98 | .96 | .99 | .99 | .49 | .06 |
| | Korea | 32.24 | 5 | .00 | 6.45 | .97 | .89 | .97 | .94 | .48 | .13 |
| Model 6 | Germany | 12.15 | 5 | .03 | 2.43 | .98 | .95 | .99 | .98 | .49 | .07 |
| | Korea | 20.09 | 5 | .00 | 4.02 | .98 | .93 | .99 | .97 | .49 | .10 |
| Model 7 | Germany | 38.45 | 8 | .00 | 4.81 | .96 | .87 | .97 | .95 | .52 | .12 |
| | Korea | 99.25 | 8 | .00 | 12.41 | .91 | .77 | .93 | .87 | .49 | .19 |
| Model 8 | Germany | 15.66 | 8 | .05 | 1.96 | .98 | .95 | .99 | .99 | .53 | .06 |
| | Korea | 71.77 | 8 | .00 | 8.97 | .94 | .83 | .95 | .90 | .50 | .16 |
| Model 9 | Germany | 18.62 | 8 | .02 | 2.33 | .98 | .94 | .99 | .98 | .52 | .07 |
| | Korea | 61.83 | 8 | .00 | 7.73 | .94 | .84 | .96 | .92 | .51 | .14 |

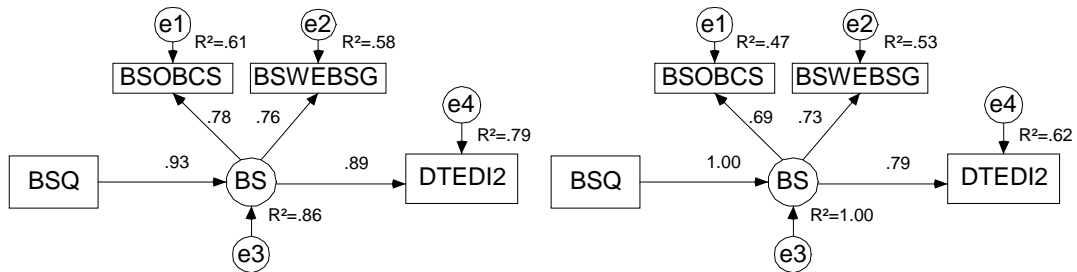
Note. Model 1 = Body Dissatisfaction -> Body Shame -> Drive for Thinness of the EDI-2; Model 2 = Body Dissatisfaction -> Body Shame -> Bulimia of the EDI-2; Model 3 = Body Dissatisfaction -> Body Shame -> Body Dissatisfaction of the EDI-2; Model 4 = Body Checking Behavior -> Body Dissatisfaction -> Body Shame -> Drive for Thinness of the EDI-2; Model 5 = Body Checking Behavior -> Body Dissatisfaction -> Body Shame -> Bulimia of the EDI-2; Model 6 = Body Checking Behavior -> Body Dissatisfaction -> Body Shame -> Body Dissatisfaction of the EDI-2; Model 7 = Body Checking Behavior -> Body Dissatisfaction -> Body Shame -> Social Appearance Anxiety -> Drive for Thinness of the EDI-2; Model 8 = Body Checking Behavior -> Body Dissatisfaction -> Body Shame -> Social Appearance Anxiety -> Bulimia of the EDI-2; Model 9 = Body Checking Behavior -> Body Dissatisfaction -> Body Shame -> Social Appearance Anxiety -> Body Dissatisfaction of the EDI-2. χ^2 = Chi-Square; CMIN/DF = Relative Chi-Square; GFI = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index; CFI = Comparative Fit Index; TLI = Tucker and Lewis Index; PNFI = Parsimony Normed Fit Index; RMSEA = Root Mean Square Error of Approximation.

The interactions among these three variables are presented in Figures 4, 5 and 6. Model 1 is shown in Figure 4. Because of the unsuitable fit indices, the path model from body dissatisfaction to drive for thinness of the EDI-2 is unreliable, and the role of body shame as a mediator could not be demonstrated. The path model 2 from body dissatisfaction to bulimia showed an excellent fit to the data (German women: $\chi^2(2) = 3.25$, $p = 0.20$, CMIN/DF = 1.62, GFI = 0.99, AGFI = 0.96, CFI = 1.00, TLI = 0.99, PNFI = 0.33 and RMSEA = 0.07; Korean women: $\chi^2(2) = 2.00$, $p = 0.37$, CMIN/DF = 1.00, GFI = 1.00, AGFI = 0.99, CFI = 1.00, TLI = 1.00, PNFI = 0.33 and RMSEA = 0.00) and a good relationship of variables (see Table 16 and Figure 5). Body shame predicted bulimia symptoms in both groups very accurately (German women: 0.65; Korean women: 0.64). Body dissatisfaction led to body shame in Korean women (0.97) slightly more often than German women (0.90). This model explains 81 % and 95 % of the variance in body shame for females in Germany and Korea, respectively (see Figure 5). Model 3 of the path from body dissatisfaction of the BSQ to body dissatisfaction of the EDI-2 also showed very good fit indices in both samples (German women: $\chi^2(2) = 4.46$, $p = 0.11$, CMIN/DF = 2.29, GFI = 0.99, AGFI = 0.96, CFI = 1.00, TLI = 0.99, PNFI = 0.33 and RMSEA = 0.07; Korean women: $\chi^2(2) = 3.78$, $p = 0.15$, CMIN/DF = 1.89, GFI = 0.99, AGFI = 0.97, CFI = 1.00, TLI = 0.99, PNFI = 0.33 and RMSEA = 0.05). The influence of body dissatisfaction in the BSQ on body shame was clear in both groups (German women: 0.91; Korean women: 0.97). Body shame predicted body dissatisfaction of the EDI-2 (German women: 0.82; Korean women: 0.73). This model explains 83 % and 95 % of the variance in body shame for German women and Korean women, respectively (see Figure 6). This model probably indicates an increase of body dissatisfaction with body shame as a mediator. In addition, the body shame of interpersonal aspect from the BSWEBSG showed slightly higher multiple squared correlations than that from internalized body shame of the BSOBCS (see Figures 5 and 6).

Figure 4. Model 1 (Body Dissatisfaction → Body Shame → Drive for Thinness of the EDI-2)

German women

Korean women

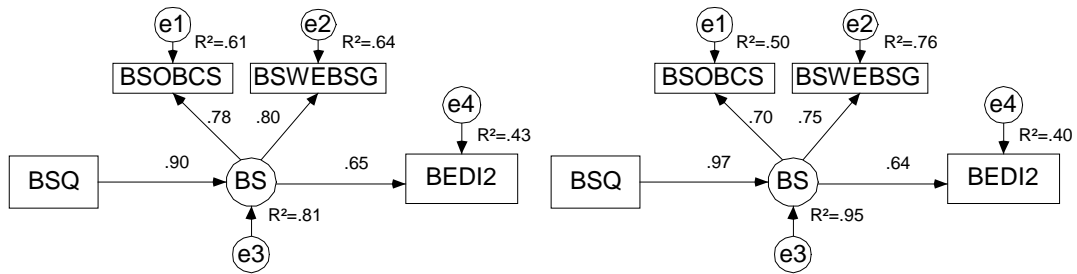


Note. R^2 = Multiple correlation squared; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEB SG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; DTEDI-2 = The Drive for Thinness subscale of the Eating Disorder Inventory 2.

Figure 5. Model 2 (Body Dissatisfaction → Body Shame → Bulimia of the EDI-2)

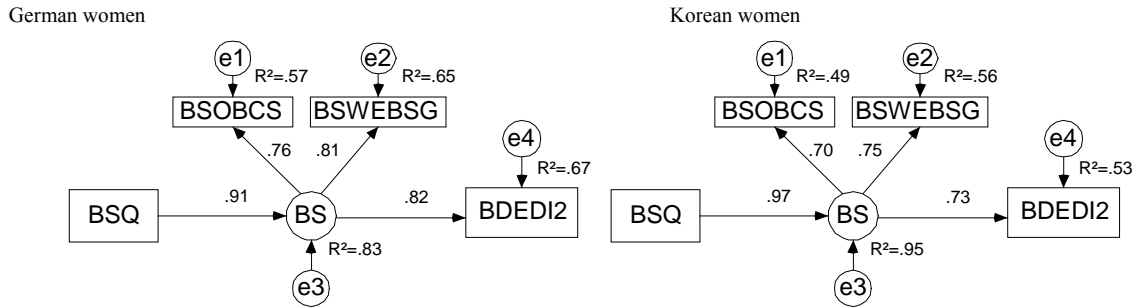
German women

Korean women



Note. R^2 = Multiple correlation squared; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEB SG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; BEDI-2 = The Bulimia subscale of the Eating Disorder Inventory 2.

Figure 6. Model 3 (Body Dissatisfaction → Body Shame → Body Dissatisfaction of the EDI-2)



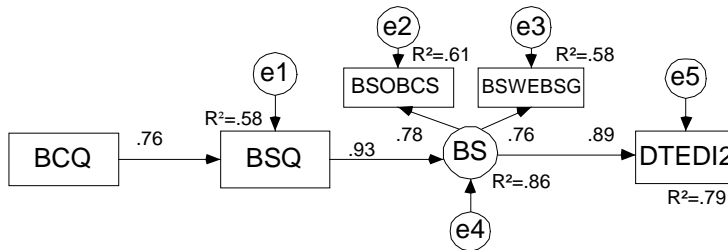
Note. R^2 = Multiple correlation squared; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEB SG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; BDEDI2 = The Body Dissatisfaction subscale of the Eating Disorder Inventory 2.

In the three path models above, body checking behavior was included in order to examine further structural equation models. The fit indices are also presented in Table 16. The additional models with the variable of body checking behavior showed similar results as the first three path models. The fit indices of model 4, referring to the path from body checking behavior to body dissatisfaction and body shame to drive for thinness, did not show sufficient fit indices from both the German and the Korean samples (see Table 16). However, model 5 referred to the path model from body checking behavior to bulimia symptoms with the variables of body dissatisfaction and body shame. Model 6 showed the path model from body checking behavior through body dissatisfaction and body shame to body dissatisfaction of the EDI-2 in German women and was a very good fit to the data. However, the fit indices of model 5 and model 6 in Korean women were partly limited, especially in the fit index of the RMSEA, with a fit index of 0.13 in model 5 and 0.10 in model 6 (see Table 16). Body checking behavior influenced the body dissatisfaction mediated body shame by 0.76 and 0.78 (German women: 0.90; Korean women: 0.97) which predicted bulimia symptoms (German women: 0.65; Korean women: 0.64) in German and Korean women, respectively (see Figure 8). The path from body checking behavior to body

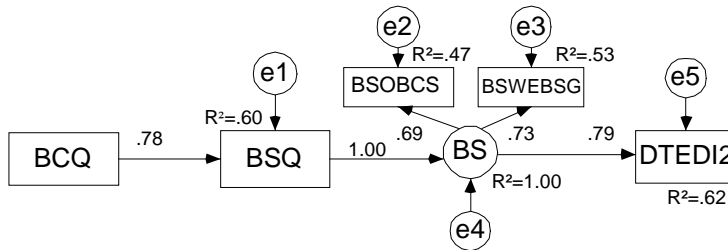
dissatisfaction of the EDI-2 is presented in Figure 8 and showed a good path model as well.

Figure 7. Model 4 (Body Checking Behavior → Body Dissatisfaction → Body Shame → Drive for Thinness of the EDI-2)

German women



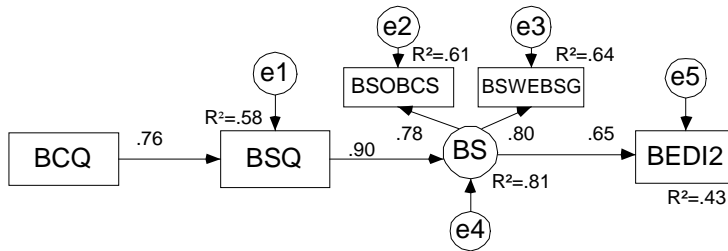
Korean women



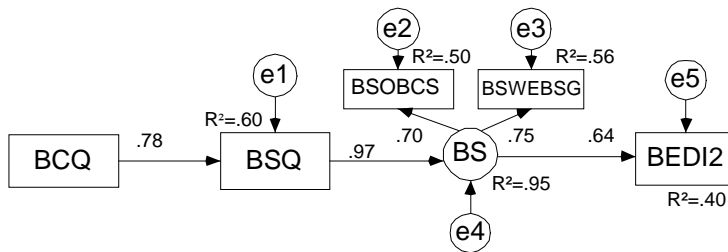
Note. R² = Multiple correlation squared; BCQ = Body Checking Behavior of the Body Checking Questionnaire; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEBBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; DTEDI-2 = The Drive for Thinness subscale of the Eating Disorder Inventory 2.

Figure 8. Model 5 (Body Checking Behavior → Body Dissatisfaction → Body Shame → Bulimia of the EDI-2)

German women



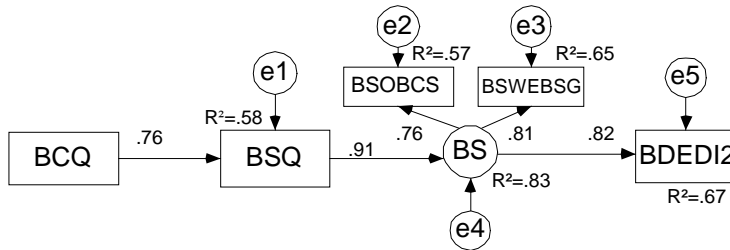
Korean women



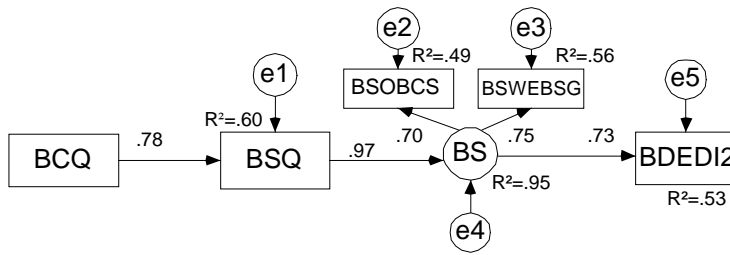
Note. R^2 = Multiple correlation squared; BCQ = Body Checking Behavior of the Body Checking Questionnaire; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEB SG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; BED1-2 = The Bulimia subscale of the Eating Disorder Inventory 2.

Figure 9. Model 6 (Body Checking Behavior → Body Dissatisfaction → Body Shame → Body Dissatisfaction of the EDI-2)

German women



Korean women

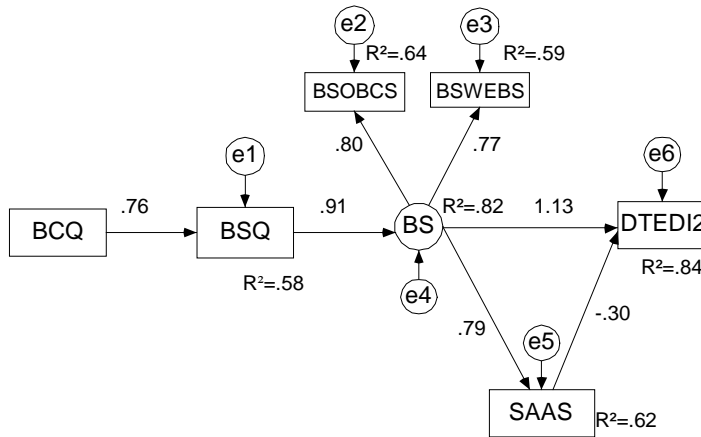


Note. R² = Multiple correlation squared; BCQ = Body Checking Behavior of the Body Checking Questionnaire; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEB SG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; BDEDI-2 = The Body Dissatisfaction subscale of the Eating Disorder Inventory 2.

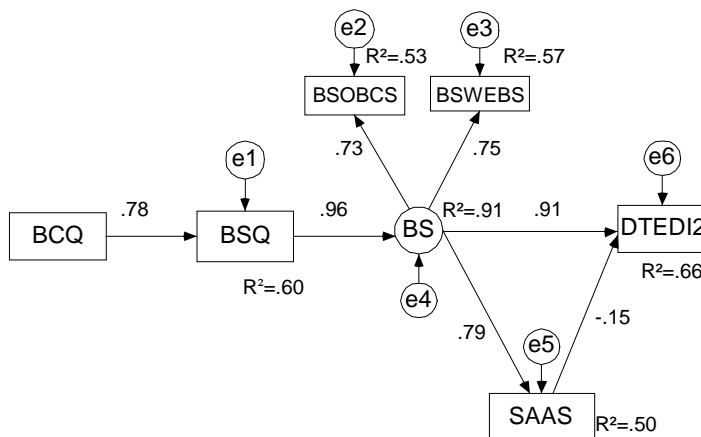
In models 7, 8 and 9, social appearance anxiety was included to examine the above path models for body checking through body dissatisfaction and body shame with three subscales of the EDI-2 (see Figures 10, 11, and 12). As a hypothesized model, body dissatisfaction influences the emotional factors of body shame and social appearance anxiety. However, social appearance anxiety was not predicted by body dissatisfaction, but rather by body shame from the testing. Therefore, models 7, 8, and 9 constructed from the body checking behavior lead to body dissatisfaction which influences body shame and consequently leads to disordered eating behaviors. In this process, body shame can influence social appearance anxiety which also encourages further bulimia symptoms. As compared with the results of models 1 and 4 from above, the fit indices of model 7 from body checking behavior to drive for thinness were unconvincing in both female groups. For German women, the path model 8 from the body checking behavior to bulimia with variables of body dissatisfaction, body shame and social appearance anxiety showed excellent fit indices ($\chi^2 (8) = 15.66, p = 0.05, \text{CMIN/DF} = 1.96, \text{GFI} = 0.98, \text{AGFI} = 0.95, \text{CFI} = 0.99, \text{TLI} = 0.99, \text{PNFI} = 0.53$ and $\text{RMSEA} = 0.06$), and it was a suitable path model only for German women (see Table 16 and Figure 11). In addition, model 9 from body checking behavior to body dissatisfaction of the EDI-2 had good fit indices in both samples (see Table 16).

Figure 10. Model 7 (Body Checking Behavior → Body Dissatisfaction → Body Shame → Social Appearance Anxiety → Drive for Thinness of the EDI-2)

German women



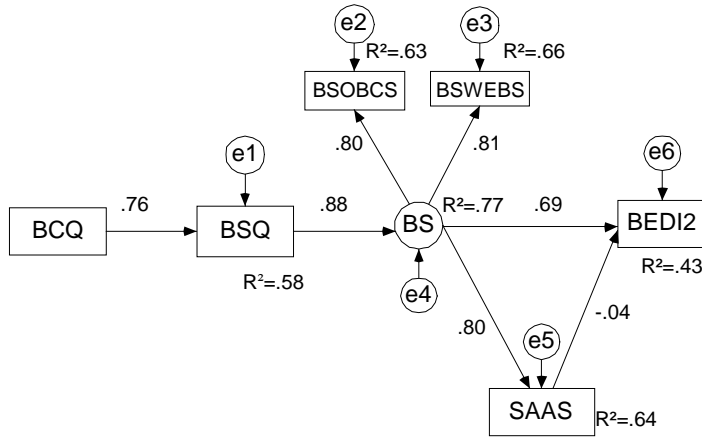
Korean women



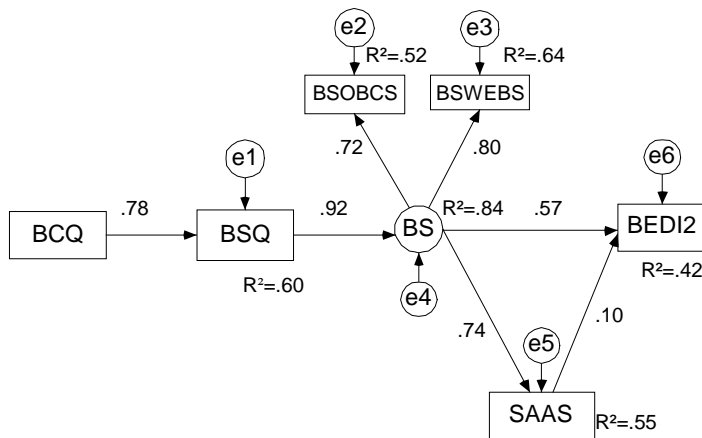
Note. R^2 = Multiple correlation squared; BCQ = Body Checking Behavior of the Body Checking Questionnaire; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; SAAS = Social Appearance Anxiety of the Social Appearance Anxiety Scale; DTEDI-2 = The Drive for Thinness subscale of the Eating Disorder Inventory 2.

Figure 11. Model 8 (Body Checking Behavior → Body Dissatisfaction → Body Shame → Social Appearance Anxiety → Bulimia of the EDI-2)

German women



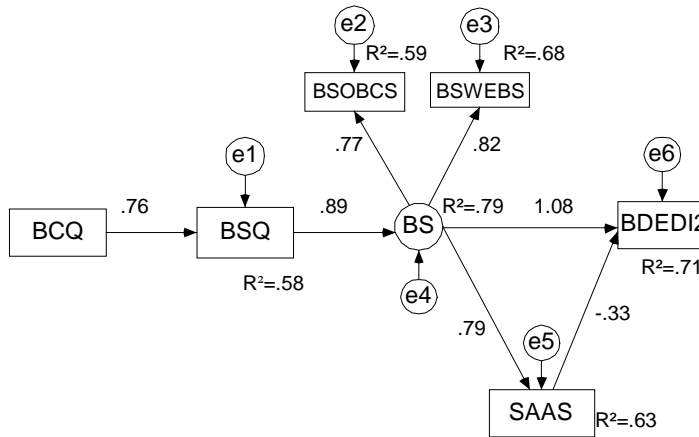
Korean women



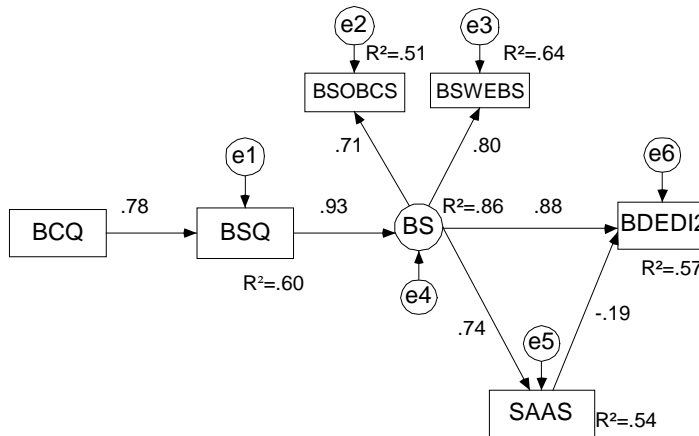
Note. R^2 = Multiple correlation squared; BCQ = Body Checking Behavior of the Body Checking Questionnaire; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; SAAS = Social Appearance Anxiety of the Social Appearance Anxiety Scale; BEDI-2 = The Bulimia subscale of the Eating Disorder Inventory 2.

Figure 12. Model 9 (Body Checking Behavior → Body Dissatisfaction → Body Shame → Social Appearance Anxiety → Body Dissatisfaction of the EDI-2)

German women



Korean women



Note. R² = Multiple correlation squared; BCQ = Body Checking Behavior of the Body Checking Questionnaire; BSQ = Body Dissatisfaction of the Body Shape Questionnaire; BS = Body Shame; BSOBCS = The Body Shame subscale of the Objectified Body Consciousness Scale; BSWEBSG = The Body Shame subscale of the Weight- and Body-related Shame and Guilt Scale; SAAS = Social Appearance Anxiety of the Social Appearance Anxiety Scale; BDEDI-2 = The Body Dissatisfaction subscale of the Eating Disorder Inventory 2.

Examinations of the structural equation model showed, especially for the German female group, a significantly positive influence of body shame on the bulimia symptoms ranging of effects from 0.65 to 0.69 in models 2, 5 and 8. Body checking behavior and body dissatisfaction strongly influenced body shame with high parameters around 0.76 and 0.90 in models 5 and 8, while social appearance anxiety had a negative interaction with bulimia symptoms in model 8 in the German female group. For the Korean women body dissatisfaction influenced body shame very strongly with high effects of 0.97, and body shame predicted significant bulimia symptoms in model 2 as well. However, the interactions between body checking behavior and social appearance anxiety were limited in the Korean women sample and showed partially unsuitable fit indices. Additionally, the pathway models for drive for thinness did not fit the data in either group.

6. Discussion

The results in the current study partially supported the hypotheses. The first hypothesis was that the measures of body dissatisfaction and disordered eating behaviors of both Korean female and male groups were higher than in German female and male groups, in spite of a lower Body Mass Index (BMI) amongst Koreans. The results showed that the Koreans had significantly higher levels of body dissatisfaction and disordered eating behavior than the German group, i.e. Korean female and male participants reported more body dissatisfaction and disordered eating behavior than German participants. However, a comparison of the BMI of German and Korean males showed no significant difference, while the BMI in German females was significantly higher than in Korean females. Additionally, the BMI showed that 5.3 % of German females and 21.3 % of Korean females were classified as underweight, and 3.2 % of German females and 0.6 % of Korean females were classified as obese. From the research it can be seen that German female college students showed relatively higher BMI levels than Korean female college students. The results concurred with other studies of Korean women (Jung et al., 2006; Jung et al., 2007; Ryu et al., 2003), i.e. many Korean women report body dissatisfaction and disordered eating behaviors, despite them having a relatively lower BMI compared to women in Western countries. This increasing of body dissatisfaction and disordered eating behaviors in Korea can be contributed to the influence of Western cultures and their values, i.e. westernization, as well as the conflicts between traditional Korean culture and adopted Western culture in Korea (Jackson et al., 2006). In the male groups of the two countries, the Korean male BMI averages were shown to be slightly higher than the BMI averages of German males. However, that was not a significant statistic. In addition, 30.1 % of the Korean male participants were overweight on the BMI, while 14.3 % of the German males were overweight or obese in the current study. The Republic of Korea's Ministry of Health and Welfare reported in 2008 that the prevalence of overweight or obese in Korean men was 31.0 % between the age of 19 and 29 years old and 38.2 % between 30 and 39 years old. The prevalence of overweight or obese in Korean men is continually increasing last decade. It was also reported that the changing eating attitudes in Korean

males and the consumption of high calorie food from West societies are risk factors for weight gain (Republic of Korean's Ministry of Health and Welfare, 2005).

The second hypothesis was that body checking behavior, body shame and social appearance anxiety rate higher in the Korean sample than in the German sample. This hypothesis was supported by the results. The Korean participants reported significantly more frequent body checking behavior and experience more body shame and social appearance anxiety than the German sample. In particular, body shame of the interpersonal aspect and social appearance anxiety were significantly influenced by the effects of the country * gender interaction for the Korean male and female participants. Interestingly, the items of the body shame subscale of the Weight- and Body-Related Shame and Guilt Scale (WEG-SG) and the items of the Social Appearance Anxiety Scale (SAAS) showed similarities in interpersonal aspects, i.e. questions from these two scales targeted similar aspects of feelings towards one's body in situations with others or in front of others. Therefore, shame and anxiety in regard to one's body could be experienced more in interpersonal contexts in Koreans. This indicates with a high probability the effect of interdependent culture and its important role in Korean society. This could be due to the fact that in a collectivistic society the relationship with the environment including relationships with people is more interrelated and the pressure from peers to be in the in-group is higher than in an individualistic society (Triandis, 1989; Triandis, 2001). In addition, the sociocultural aspect for the development of eating disorders can explain the strong social pressure in collectivistic culture. Therefore, emotions of shame about one's body or appearance anxiety in front of others may be more important in the presence of or in cooperation with others in Korea than in Germany.

The last hypothesis was concerned with the different roles between variables of body checking behavior, body shame, social appearance anxiety on disordered eating behaviors and body dissatisfaction in Koreans and Germans. In particular, how body checking behavior, body shame and social appearance anxiety play different roles in Koreans and Germans. This hypothesis was partially supported by the female groups. Due to the small sample sizes of males in both countries, only data from the female groups were included in the structural equation model testing. Additionally, the BMI

was irrelevant for interactions among variables in both groups of women. It was found that body dissatisfaction influenced body shame which predicted bulimia symptoms with a similarly high effect in German and Korean females. This result supported results of other studies which have reported that body shame increases bulimia symptoms and mediates in the relationship between body dissatisfaction and disordered eating behaviors (e.g., Sanftner et al., 1995; Burney et al., 2000). However, body shame did not predict drive for thinness in both groups. The result of the current study indicates that the role of body shame is similarly important in the process from body dissatisfaction to bulimia symptoms in both German and Korean females.

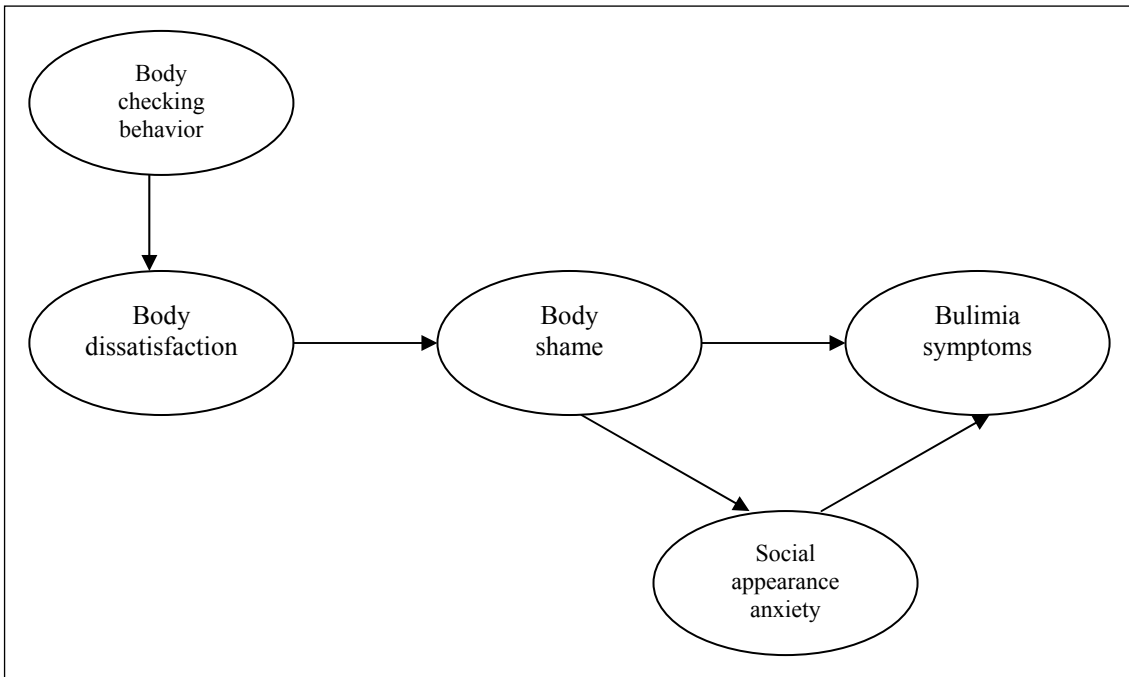
In addition, body checking behavior led to body dissatisfaction in German women, whereas this interaction in Korean women was not supported by the result of the fit indices. As well as, social appearance anxiety played a role in the relationship between body shame and bulimia symptoms in German females only. The roles of these two variables of body checking behavior and social appearance anxiety are different in German females and Korean females. Body checking behavior led to body dissatisfaction influencing body shame which predicted further bulimia symptoms in German female college students, and in this process social appearance anxiety was influenced by body shame and predicted bulimia symptoms. This indicates that body shame may be the first negative affect in body dissatisfaction in this process, and not until then can social appearance anxiety be increased by body shame. The results of this pathway model proved to be similar to other studies in Western samples which have reported that the roles of body checking behavior and social appearance anxiety in relation to body dissatisfaction and disordered eating attitudes are very influential (e.g., Sharfran et al., 2007; Fairburn et al., 2003). However, this pathway in Korean females was not supported by the fit indices. This difference in the variables of body checking behavior and social appearance anxiety between German women and Korean women was also found in the factor analysis of the current study which is described below in regard to translated instruments.

Furthermore, the pathway model from body dissatisfaction of the Body Shape Questionnaire (BSQ) to body shame as a mediator leading to body dissatisfaction of the Eating Disorder Inventory 2 (EDI-2) showed good fit indices in both female groups.

However, this pathway model is difficult to use to theoretically interpret what the difference is between body dissatisfaction of the BSQ and body dissatisfaction of the EDI-2. One possible explanation for this result could be explained by the enhancing effect of body shame on body dissatisfaction, i.e. body dissatisfaction influences body shame, and in turn body shame strengthens body dissatisfaction. Additionally, items of the BSQ include dissatisfaction with one's weight, shape, and the development of body checking behaviors in order to assess one's body compared to others, while items of the body dissatisfaction subscale of the EDI-2 focus mostly on hips and weight, i.e. the BSQ may assess larger ranges of body dissatisfaction than the body dissatisfaction subscale of the EDI-2.

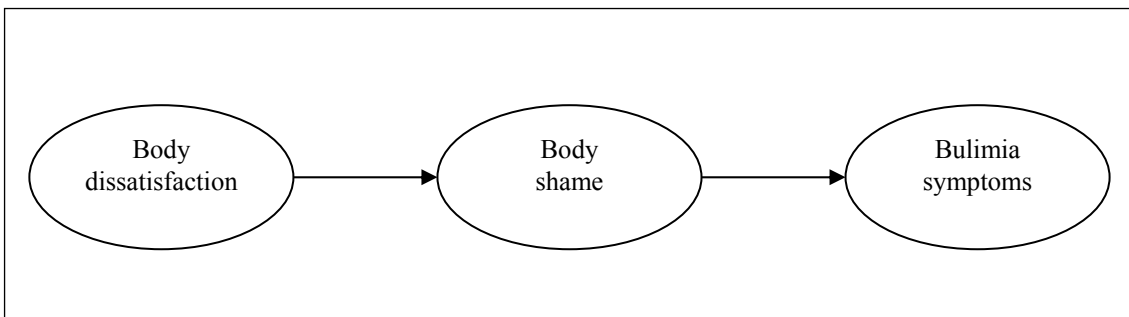
Consequently, the best fitting model for German females was the pathway from body checking to body dissatisfaction which increases body shame and social appearance anxiety leading to bulimia symptoms. For Korean women this model was not supported by the data (see Figure 13).

Figure 13. The Best Fitting Model for German Women



The pathway model from body dissatisfaction mediated by body shame leading to bulimia symptoms was the best suitable model for Korean females and proved to be a good-fitting pathway for German females as well (see Figure 14).

Figure 14. The Best Fitting Model for Korean Women



These results showed a similar role of body shame in the process from body dissatisfaction to bulimia symptoms in both female samples which partly supports the dual path model for bulimia by Stice et al. (1996), and a different interaction among variables of body checking behavior and social appearance anxiety in German and Korean women. Some studies showed that body checking behavior increases body dissatisfaction and that social anxiety is an influential factor for the development of disordered eating pathology in Westerners (e.g., Williamson et al., 1999; Shafran et al., 2007; Fairburn et al., 2003; Grabhorn et al., 2005). The results from the analysis of the German female sample in the current study supported these findings. However, for Korean women, body checking behavior and social appearance anxiety could have another meaning or play a different role in regard to body dissatisfaction and disordered eating behaviors. For example, behaviors from the items of the Body Checking Questionnaire (BCQ) may likely be appearing randomly, irrespective of body dissatisfaction in Korean females. In addition, social appearance anxiety may not necessarily relate to disordered eating behaviors amongst Korean females, because good looks or ideal beauty are prevalent as the norm in daily life in Koreans, in particular Korean women (Jung et al., 2006). The higher result of the means on the SAAS in the Korean sample than that of the German sample may support this prevalent social norm of ideal beauty in Korean society. It was also possible that the individuals in a collectivistic culture such as Korea may stress more self-control or to conformity to the in-group rule than individuals in an individualistic culture such as Germany (Stephan et al., 1998). This Korean culture can be related to an increase in body checking behavior or social appearance anxiety without a pathological relationship of disordered eating symptoms. In addition, it is also possible that the pathway models including body checking and social appearance anxiety were based on empirical studies and theories from Western research, and their instruments and diagnostic criteria may be more suitable for Westerners than non-Westerners.

Regarding translated instruments, the Cronbach's alphas showed good reliabilities ranging from 0.76 to 0.95 in females, and 0.58 to 0.97 in males of all translated scales, and showed also mostly good correlations in both Germans and Koreans, i.e. most variables in the current study were interrelated with each other, and instruments

including translated scales in the current study for Germans and Koreans were sufficiently reliable in the interpretation of the results. However, the reliabilities of the body shame subscale of the Objectified Body Consciousness Scale (BSOBCS) in German males was slightly lower with a level of 0.58 in Cronbach's alpha compared to other scales of the current study. The Cronbach's alpha in Korean males was also lower in comparison to other scales, but with an acceptable level of 0.67. Additionally, the factor analysis showed differences between Germans and Koreans. Three components of factor analysis were extracted in both male groups which should have had one component for the factor of the body shame subscale in study on the development of the OBCS by McKinley et al. (1996). Therefore, these items of the BSOBCS may be more suitable to measure internalized body shame for women than men or internalized shame might be more relevant for women than for men. Moreover, from the Varimax rotation of factor analysis, different factor components were found for the translated Social Appearance Anxiety Scale (SAAS) and the Body Checking Questionnaire (BCQ) in German and Korean females, and the variables showed different roles in the structural equation model testing of German females and Korean females. The German females showed three components of the SAAS, and the Korean females showed two components. In the BCQ German females had six components, while Korean females had only two factors. This different factor loading of items could be explained by the different interactions of the pathway model from body checking behavior through body dissatisfaction, body shame and social appearance anxiety to bulimia symptoms. This pathway model only worked for German females, and it appears possible that other interactions and functions of body checking behavior and social appearance anxiety for Korean females. The factor analysis of the BCQ and SAAS also showed different constructions with different factor loading of items in each factor of Germans and Koreans, i.e. the items of these two scales could have different meanings for German and Korean females and might assess social appearance anxiety and body checking behavior without an equal conceptual background.

In addition, Koreans reported significantly higher levels of psychological symptoms on the SCL-90 R than the German subjects. Korean college students reported more experiences of psychological symptoms. Both male and female groups showed high

reliabilities of the SCL-90 R with a range of Cronbach's alphas from 0.95 to 0.99. The relationships among variables of body shame, social appearance anxiety, body checking behavior, disordered eating behaviors, body dissatisfaction in the current study and psychological symptoms of the SCL-90 R were not very strong, but showed positive correlations in all groups. It is possible that Korean participants may have a tendency to take more seriously their psychological symptoms and report higher levels on measures than German participants. However, it is not clear from the results in the current study how the psychological symptoms play a role in relation to these variables of body shame, social appearance anxiety, body checking behavior, disordered eating behaviors, body dissatisfaction in samples of both countries, or whether the relationships among variables and psychological symptoms have a more effective impact on Koreans than Germans.

There are some limitations in the current study. First, the samples were non-clinical college students in Germany and Korea. The results showed a prevalence of disordered eating behaviors and body dissatisfaction in both countries. However, the results were limited to non-clinical college students from Germany and Korea. Additionally, the sample size of males was relatively small compared to females in both countries, and the overall sample size of Germans was smaller than the Korean sample size.

Second, the current study was conducted using self-report measures. The disadvantage of the self-report is that participants may not have reported accurate height and weight, as well as other psychological symptoms in relation to the current study.

Third, several instruments were translated for Germans and Koreans. In cross-cultural study methodology translation of scales is an especially important issue. During translation, it is possible to change the meaning of an item because of the differences between the languages or decisions made by researchers. Additionally, most instruments were developed in and for Western societies, i.e. all items are designed more for Westerners than non-Westerners. In the current study several scales were translated. In spite of the careful process of translation and retranslation by bilingual persons, and good reliabilities of translated scales, it is possible that some items in particular were presented with slightly different meanings in each culture, or it simply may be a disadvantage to compare results from both countries. Therefore, the translated

instruments in the current study need to be used more to determine their validity in various groups, and the instruments proven to be valid should be used in future research.

The final limitation is the lack of instruments that can demonstrate the differences between the cultural features of individualism and collectivism in Germany and Korea. Only from theoretical backgrounds were the differences between the cultures of Germany and Korea considered. Whether Germans are idiocentric, Koreans allocentric or whether Germany is an individualistic society and Korea a collectivistic society were not taken into consideration. For example, it could be useful to investigate levels of idiocentrism or allocentrism of each individual in both the German and Korean samples. All cultures and individuals have both individualistic and collectivistic cognitive structures, and each individual develops idiocentric structures or allocentric structures in order to adjust to each society (Triandis & Suh, 2002). Thus, the levels of idiocentrism and allocentrism may more clearly present individualistic and collectivistic cultural differences between Germany and Korea. Unfortunately, the current study did not investigate the levels of idiocentrism and allocentrism with respect to the concepts of collectivism and individualism in the German and Korean samples.

Despite some limitations, the current cross-cultural study showed a high prevalence of body dissatisfaction and disordered eating behaviors in Koreans, and that body shame plays a similar role as a predictor in the process from body dissatisfaction to bulimia symptoms in women of both countries, i.e. body shame was not influenced by the cultural differences in the current study and could be an important factor for the development of bulimia symptoms in German and Korean women. In addition, the different interactions of body checking behavior and social appearance anxiety in German and Korean females were also found in the relationship between body dissatisfaction, body shame and bulimia symptoms. These two factors were influences only in German women, i.e. there were cultural differences. Body checking behavior and social appearance anxiety may be more related to cultural norms or adjusted behaviors than to severe bulimia symptoms in the Korean culture. The limitations should be addressed in further studies, and by doing so may produce findings that more directly explain the different roles of body shame, social appearance anxiety and body checking behavior in regard to eating disorders amongst Germans and Koreans.

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Appendix

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1. Body Shame Subscale of the Objectified Body Consciousness Scale (BS-OBCS)

Lesen Sie bitte jede Frage durch und kreuzen Sie dann die zutreffende Antwort an.

| | völlig unzutreffend | überwiegend unzutreffend | teilweise unzutreffend | teilweise zutreffend | überwiegend zutreffend | völlig zutreffend | |
|---|------------------------|-----------------------------|---------------------------|-------------------------|---------------------------|----------------------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1. Wenn ich mein Gewicht nicht kontrollieren kann, fühle ich mich, als ob mit mir etwas nicht stimmt. | | | | 1 | 2 | 3 | 4 5 6 |
| 2. Ich schäme mich für mich selbst, wenn ich mir nicht die Mühe gemacht habe, so gut wie möglich auszusehen. | | | | 1 | 2 | 3 | 4 5 6 |
| 3. Ich fühle mich wie ein schlechter Mensch, wenn ich nicht gut so aussehe, wie ich eigentlich könnte. | | | | 1 | 2 | 3 | 4 5 6 |
| 4. Ich würde mich schämen, wenn andere Leute mein wirkliches Gewicht wissen würden. | | | | 1 | 2 | 3 | 4 5 6 |
| 5. Ich mache mir nie Sorgen darüber, dass etwas mit mir nicht stimmt, wenn ich weniger Sport treibe als ich sollte. | | | | 1 | 2 | 3 | 4 5 6 |
| 6. Wenn ich nicht genug Sport treibe, frage ich mich selbst, ob ich als Person gut genug bin. | | | | 1 | 2 | 3 | 4 5 6 |
| 7. Selbst wenn ich mein Gewicht nicht kontrollieren kann, denke ich, dass ich ganz in Ordnung bin. | | | | 1 | 2 | 3 | 4 5 6 |
| 8. Wenn ich nicht die Körpermaße habe, die ich haben sollte, schäme ich mich. | | | | 1 | 2 | 3 | 4 5 6 |

2. Social Appearance Anxiety Scale (SAAS)

Bitte geben Sie an, wie stark die Aussagen für Sie selber typisch sind.

| | überhaupt nicht typisch | etwas typisch | einiger- maßen typisch | sehr typisch | extrem typisch |
|--|-------------------------------|------------------|------------------------------|-----------------|-------------------|
| 1. Ich fühle mich wohl damit, wie ich auf andere wirke. | 1 | 2 | 3 | 4 | 5 |
| 2. Ich bin nervös, wenn ich mich fotografieren lasse. | 1 | 2 | 3 | 4 | 5 |
| 3. Ich bin angespannt, wenn mich Menschen offensichtlich anschauen. | 1 | 2 | 3 | 4 | 5 |
| 4. Ich Sorge mich darum, dass mich Menschen wegen meines Aussehens nicht mögen. | 1 | 2 | 3 | 4 | 5 |
| 5. Ich bin besorgt, dass Menschen über Schwächen meines Aussehens sprechen, wenn ich nicht dabei bin. | 1 | 2 | 3 | 4 | 5 |
| 6. Ich bin besorgt, dass Leute mich wegen meines Aussehens unsympathisch finden. | 1 | 2 | 3 | 4 | 5 |
| 7. Ich habe Angst davor, dass Menschen mich unattraktiv finden. | 1 | 2 | 3 | 4 | 5 |
| 8. Ich mache mir Sorge darum, dass mein Aussehen mein Leben schwieriger machen wird. | 1 | 2 | 3 | 4 | 5 |
| 9. Ich bin besorgt, wegen meines Aussehens Möglichkeiten zu verpassen. | 1 | 2 | 3 | 4 | 5 |
| 10. Wegen meines Aussehens werde ich nervös, wenn ich mit Menschen spreche. | 1 | 2 | 3 | 4 | 5 |
| 11. Ich fühle mich ängstlich, wenn andere Menschen etwas über mein Aussehen sagen. | 1 | 2 | 3 | 4 | 5 |
| 12. Ich habe oft Angst davor, dass ich die Ansprüche anderer, wie ich aussehen soll, nicht erfülle. | 1 | 2 | 3 | 4 | 5 |
| 13. Ich mache mir Sorge darum, dass Leute mein Aussehen negativ beurteilen. | 1 | 2 | 3 | 4 | 5 |
| 14. Ich fühle mich unwohl, wenn Ich denke, dass andere Menschen an meinem Aussehen eine Schwäche bemerken. | 1 | 2 | 3 | 4 | 5 |
| 15. Ich bin besorgt, dass mein Partner/Partnerin mich wegen meines Aussehens verlassen wird/würde. | 1 | 2 | 3 | 4 | 5 |
| 16. Ich bin besorgt, dass Leute denken, ich sehe nicht gut aus. | 1 | 2 | 3 | 4 | 5 |

3. Body Shape Questionnaire (BSQ) for Women

Die folgenden Fragen beziehen sich auf Gedanken und Gefühle, die mit ihrer Figur zusammenhängen. Bitte denken Sie bei Ihren Antworten an die letzten vier Wochen. Lesen Sie bitte jede Frage durch und kreuzen Sie dann rechts die zutreffende Antwort an. Bitte beantworten Sie alle Fragen.

| | nie | selten | manch- mal | oft | sehr oft | immer |
|--|-----|--------|---------------|-----|----------|-------|
| 1. Haben Sie über Ihre Figur nachgegrübelt, wenn Ihnen langweilig war? | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Hat Ihre Figur Sie so beunruhigt, dass Sie dachten, Sie sollten eine Diät machen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Fanden Sie Ihre Oberschenkel, Hüften oder Ihr Gesäß zu dick im Vergleich zum Rest Ihres Körpers? | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Hatten Sie Angst davor, dick zu werden (oder dicker)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Haben Sie befürchtet, Ihr Gewebe sei nicht straff genug? | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Fühlten Sie sich dick mit einem vollen Magen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Waren Sie so unglücklich über Ihre Figur, dass Sie geweint haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Haben Sie schnelles Laufen vermieden, weil Ihr Gewebe dann schwabbeln könnte? | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Führte das Zusammensein mit schlanken Frauen dazu, dass Sie sich mit Ihrer Figur beschäftigt haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Haben Sie befürchtet, Ihre Oberschenkel könnten beim Sitzen besonders breit (dick) aussehen. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Fühlten Sie sich schon dick, obwohl Sie nur eine kleine Menge gegessen hatten? | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Fanden Sie Ihre eigene Figur im Vergleich mit den anderen Frauen weniger attraktiv? | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Hat die Beschäftigung mit Ihrer Figur Ihre Konzentrationsfähigkeit beeinträchtigt (z.B. beim Fernsehen, Lesen oder in Gesprächen)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Sind Sie sich dick vorgekommen, wenn Sie nackt waren (z.B. beim Baden)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Haben Sie bestimmte Kleidungsstücke nicht angezogen, weil Ihnen Ihre Körperformen darin besonders bewusst waren? | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Haben Sie sich vorgestellt, an bestimmten Stellen Ihres Körpers das Fett einfach wegzuschneiden? | 1 | 2 | 3 | 4 | 5 | 6 |

| | nie | selten | manch- mal | oft | sehr oft | immer |
|--|-----|--------|---------------|-----|----------|-------|
| 17. Haben Sie sich dick gefühlt, nachdem Sie Süßigkeiten, Kuchen oder andere kalorienreiche Speisen gegessen haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Sind Sie zu bestimmten geselligen Anlässen (z.B. Parties) nicht gegangen, weil Sie sich Sorgen über Ihre Figur gemacht haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. Haben Sie sich dick und fett gefühlt? | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. Haben Sie sich wegen Ihres Körpers geschämt? | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. Haben Sie Diät gehalten, weil Sie sich Sorgen über Ihre Figur gemacht haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. Fühlten Sie sich am wohlsten in Ihrer Figur, wenn Ihr Magen leer war (z.B. morgens)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. Haben Sie gedacht, Ihre jetzige Figur sei die Folge mangelnder Selbstbeherrschung? | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. Haben Sie befürchtet, andere könnten Speckfalten um Ihre Taille oder Ihren Bauch sehen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 25. Fanden Sie es ungerecht, dass andere Frauen dünner sind als Sie? | 1 | 2 | 3 | 4 | 5 | 6 |
| 26. Haben Sie erbrochen, um sich schlanker zu fühlen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 27. Hatten Sie das Gefühl, im Beisein anderer zu viel Platz zu benötigen (z.B. als Sie auf einem Sofa oder einer Bussitzbank saßen)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 28. Haben Sie befürchtet, Ihr Gewebe könnte Dellen oder Vertiefungen haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 29. Haben Sie Ihre Figur abgelehnt, wenn Sie sich im Spiegel sahen (oder im Schaufenster)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 30. Haben Sie Ihre Haut an manchen Körperstellen zusammengedrückt, um zu prüfen, wie viel Fett Sie dort haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 31. Haben Sie Situationen gemieden, in denen andere Ihre Körper sehen könnten (Schwimmbad, Umkleiden)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 32. Haben Sie Abführmittel genommen, um sich schlanker zu fühlen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 33. Führte das Zusammensein mit anderen dazu, dass Sie sich besonders mit Ihrer Figur beschäftigt haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 34. Haben Sie aus Sorge um Ihre Figur daran gedacht, Sport zu treiben (sich körperlich zu bewegen)? | 1 | 2 | 3 | 4 | 5 | 6 |

4. Body Shape Questionnaire (BSQ) for Men

Die folgenden Fragen beziehen sich auf Gedanken und Gefühle, die mit ihrer Figur zusammenhängen. Bitte denken Sie bei Ihren Antworten an die letzten vier Wochen. Lesen Sie bitte jede Frage durch und kreuzen Sie dann rechts die zutreffende Antwort an. Bitte beantworten Sie alle Fragen.

| | nie | seltener | manchmal | oft | sehr oft | immer |
|--|-----|----------|----------|-----|----------|-------|
| 1. Haben Sie über Ihre Figur nachgegrübelt, wenn Ihnen langweilig war? | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Hat Ihre Figur Sie so beunruhigt, dass Sie dachten, Sie sollten eine Diät machen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Fanden Sie Ihre Oberschenkel, Hüften oder Ihr Gesäß zu dick im Vergleich zum Rest Ihres Körpers? | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Hatten Sie Angst davor, dick zu werden (oder dicker)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Haben Sie befürchtet, Ihr Gewebe sei nicht straff genug? | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Fühlten Sie sich dick mit einem vollen Magen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Waren Sie so unglücklich über Ihre Figur, dass Sie geweint haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Haben Sie schnelles Laufen vermieden, weil Ihr Gewebe dann schwabbeln könnte? | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Führte das Zusammensein mit schlanken Männern dazu, dass Sie sich mit Ihrer Figur beschäftigt haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Haben Sie befürchtet, Ihre Oberschenkel könnten beim Sitzen besonders breit (dick) aussehen. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Fühlten Sie sich schon dick, obwohl Sie nur eine kleine Menge gegessen hatten? | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Fanden Sie Ihre eigene Figur im Vergleich mit den anderen Männern weniger attraktiv? | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Hat die Beschäftigung mit Ihrer Figur Ihre Konzentrationsfähigkeit beeinträchtigt (z.B. beim Fernsehen, Lesen oder in Gesprächen)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Sind Sie sich dick vorgekommen, wenn Sie nackt waren (z.B. beim Baden)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Haben Sie bestimmte Kleidungsstücke nicht angezogen, weil Ihnen Ihre Körperformen darin besonders bewusst waren? | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Haben Sie sich vorgestellt, an bestimmten Stellen Ihres Körpers das Fett einfach wegzuschneiden? | 1 | 2 | 3 | 4 | 5 | 6 |

| | nie | selten | manch- mal | oft | sehr oft | immer |
|--|-----|--------|---------------|-----|----------|-------|
| 17. Haben Sie sich dick gefühlt, nachdem Sie Süßigkeiten, Kuchen oder andere kalorienreiche Speisen gegessen haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Sind Sie zu bestimmten geselligen Anlässen (z.B. Parties) nicht gegangen, weil Sie sich Sorgen über Ihre Figur gemacht haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. Haben Sie sich dick und fett gefühlt? | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. Haben Sie sich wegen Ihres Körpers geschämt? | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. Haben Sie Diät gehalten, weil Sie sich Sorgen über Ihre Figur gemacht haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. Fühlten Sie sich am wohlsten in Ihrer Figur, wenn Ihr Magen leer war (z.B. morgens)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. Haben Sie gedacht, Ihre jetzige Figur sei die Folge mangelnder Selbstbeherrschung? | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. Haben Sie befürchtet, andere könnten Speckfalten um Ihre Taille oder Ihren Bauch sehen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 25. Fanden Sie es ungerecht, dass andere Männer dünner sind als Sie? | 1 | 2 | 3 | 4 | 5 | 6 |
| 26. Haben Sie erbrochen, um sich schlanker zu fühlen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 27. Hatten Sie das Gefühl, im Beisein anderer zu viel Platz zu benötigen (z.B. als Sie auf einem Sofa oder einer Bussitzbank saßen)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 28. Haben Sie befürchtet, Ihr Gewebe könnte Dellen oder Vertiefungen haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 29. Haben Sie Ihre Figur abgelehnt, wenn Sie sich im Spiegel sahen (oder im Schaufenster)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 30. Haben Sie Ihre Haut an manchen Körperstellen zusammengedrückt, um zu prüfen, wie viel Fett Sie dort haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 31. Haben Sie Situationen gemieden, in denen andere Ihre Körper sehen könnten (Schwimmbad, Umkleiden)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 32. Haben Sie Abführmittel genommen, um sich schlanker zu fühlen? | 1 | 2 | 3 | 4 | 5 | 6 |
| 33. Führte das Zusammensein mit anderen dazu, dass Sie sich besonders mit Ihrer Figur beschäftigt haben? | 1 | 2 | 3 | 4 | 5 | 6 |
| 34. Haben Sie aus Sorge um Ihre Figur daran gedacht, Sport zu treiben (sich körperlich zu bewegen)? | 1 | 2 | 3 | 4 | 5 | 6 |

5. Body Shame Subscale of the Weight- and Body-Related Shame and Guilt Scale (BS-WEB-SG)

Lesen Sie die folgenden Aussagen bitte aufmerksam durch. Geben Sie durch Ankreuzen an, wie oft sie diese Gefühle in den letzten sechs Monaten erlebten.

| | nie | selten | manch- mal | oft | immer |
|---|-----|--------|---------------|-----|-------|
| 1. Wenn ich in Situationen bin, in denen andere meinen Körper sehen können (z.B. Schwimmbad/ Umkleide), schäme ich mich. | 0 | 1 | 2 | 3 | 4 |
| 2. Das Aussehen meines Körpers ist mir vor anderen Leuten peinlich. | 0 | 1 | 2 | 3 | 4 |
| 3. Wenn ich daran denke, dass andere meine Figur nackt sehen könnten, möchte ich am liebsten im Boden versinken. | 0 | 1 | 2 | 3 | 4 |
| 4. Ich schäme mich, wenn andere Leute erfahren, wie viel ich wirklich wiege. | 0 | 1 | 2 | 3 | 4 |
| 5. Ich vermeide es, mich vor anderen körperlich anzustrengen, da es mir peinlich ist. | 0 | 1 | 2 | 3 | 4 |
| 6. Da mir meine Kleidergrößen peinlich sind, würde ich es am liebsten vermeiden, neue Bekleidung in Geschäften einzukaufen. | 0 | 1 | 2 | 3 | 4 |

6. Body Checking Questionnaire (BCQ)

Bitte kreuzen Sie die Zahl an, die am besten beschreibt, wie oft Sie das jeweilige Verhalten zurzeit durchführen. Schauen Sie sich bitte die unten stehende Skala genau an und kreuzen Sie dann hinter jeder Aussage die auf Sie entsprechende Antwortalternative an.

| | nie | selten | manchmal | oft | immer |
|---|-----|--------|----------|-----|-------|
| 1. Ich überprüfe, ob meine Oberschenkel breiter werden, wenn ich mich hinsetze. | 0 | 1 | 2 | 3 | 4 |
| 2. Ich kneife in meinen Bauch, um zu überprüfen, wie dick er ist. | 0 | 1 | 2 | 3 | 4 |
| 3. Ich besitze bestimmte Kleidungsstücke, die ich anprobiere, um sicherzugehen, dass sie noch passen. | 0 | 1 | 2 | 3 | 4 |
| 4. Ich kontrolliere den Durchmesser meines Handgelenkes, um sicherzugehen, dass es dieselbe Größe hat wie vorher. | 0 | 1 | 2 | 3 | 4 |
| 5. Ich überprüfe mein Spiegelbild in Glastüren oder Autofenstern, um festzustellen, wie ich aussehe. | 0 | 1 | 2 | 3 | 4 |
| 6. Ich kneife in meine Oberarme, um zu überprüfen, wie dick sie sind. | 0 | 1 | 2 | 3 | 4 |
| 7. Ich berühre mich unterhalb des Kinns, um sicherzugehen, dass ich kein ‚Doppelkinn‘ habe. | 0 | 1 | 2 | 3 | 4 |
| 8. Ich schaue andere Leute an, um meine Figur mit deren Figur zu vergleichen. | 0 | 1 | 2 | 3 | 4 |
| 9. Ich reibe oder berühre meine Oberschenkel während ich sitze, um zu überprüfen, ob sie zu dick sind. | 0 | 1 | 2 | 3 | 4 |
| 10. Ich kontrolliere den Durchmesser meiner Beine, um zu überprüfen, ob sie die gleiche Größe haben wie vorher. | 0 | 1 | 2 | 3 | 4 |
| 11. Ich frage andere nach ihrem Gewicht oder ihrer Kleidergröße, um mein eigenes Gewicht und meine eigene Kleidergröße mit ihnen vergleichen zu können. | 0 | 1 | 2 | 3 | 4 |
| 12. Ich überprüfe, wie mein Po im Spiegel aussieht. | 0 | 1 | 2 | 3 | 4 |
| 13. Ich setze und stelle mich in verschiedenen Positionen hin, um auszuprobieren, wie ich in jeder dieser Positionen aussehe. | 0 | 1 | 2 | 3 | 4 |
| 14. Ich überprüfe, ob meine Oberschenkel aneinander reiben. | 0 | 1 | 2 | 3 | 4 |
| 15. Ich versuche, anderen Kommentare darüber zu entlocken, wie dick ich bin. | 0 | 1 | 2 | 3 | 4 |
| 16. Ich kontrolliere, ob mein Fett wippt. | 0 | 1 | 2 | 3 | 4 |
| 17. Ich ziehe meinen Bauch ein, um zu sehen, wie es ist, wenn mein Bauch ganz flach ist. | 0 | 1 | 2 | 3 | 4 |

| | nie | selten | manchmal | oft | immer |
|--|-----|--------|----------|-----|-------|
| 18. Ich kontrolliere, ob meine Ringe genauso gut passen wie vorher. | 0 | 1 | 2 | 3 | 4 |
| 19. Ich überprüfe, ob ich im Sitzen Cellulitis an meinen Oberschenkeln habe. | 0 | 1 | 2 | 3 | 4 |
| 20. Ich lege mich auf den Fußboden, um zu überprüfen, ob ich spüren kann, dass meine Knochen den Boden berühren. | 0 | 1 | 2 | 3 | 4 |
| 21. Ich ziehe meine Kleidung so, dass sie möglichst eng anliegt, um zu überprüfen, wie ich aussehe. | 0 | 1 | 2 | 3 | 4 |
| 22. Ich vergleiche mich mit Models im Fernsehen oder in Zeitschriften. | 0 | 1 | 2 | 3 | 4 |
| 23. Ich kneife in meine Wangen, um zu überprüfen, wie dick sie sind. | 0 | 1 | 2 | 3 | 4 |

7. Angaben zur Person (für Deutsche)

Bitte kreuzen Sie die Zahl an oder tragen Sie ein.

1. Alter: _____ Jahre
2. Geschlecht: 1. weiblich
 2. männlich
3. Sexuelle Orientierung: 1. heterosexuell
 2. homosexuell
 3. bisexuell
4. Familienstand: 1. ledig mit Partner/Partnerin
 2. ledig ohne Partner/Partnerin
 3. verheiratet, zusammenlebend
 4. verheiratet, getrennt lebend
 5. geschieden
 6. verwitwet
5. Anzahl der Kinder: _____
6. Ethnische Identifikation (z.B. deutsche oder deutsche mit ausländischer Herkunft sowie anderer weiteren Migrationshintergrund)
 1. deutsch
 2. andere (bitte eintragen): _____
7. Staatsangehörigkeit:
 1. deutsch
 2. andere (bitte eintragen): _____
8. Muttersprache:
 1. deutsch
 2. andere (bitte eintragen): _____
9. Größe (Bitte schätzen Sie so gut wie möglich): _____ cm
10. Gewicht (Bitte Schätzen Sie so gut wie möglich): _____ kg

8. Factor Loading with Varimax Rotation of the Social Appearance Anxiety Scale

Rotated Component Matrix (a, b)

| item | Component | | |
|------------------------------|-----------|------|------|
| | 1 | 2 | 3 |
| social appearance anxiety 13 | .842 | .206 | .231 |
| social appearance anxiety 12 | .794 | .186 | .167 |
| social appearance anxiety 16 | .778 | .324 | .207 |
| social appearance anxiety 14 | .750 | .164 | .195 |
| social appearance anxiety 7 | .727 | .181 | .280 |
| social appearance anxiety 15 | .609 | .421 | .059 |
| social appearance anxiety 4 | .604 | .383 | .338 |
| social appearance anxiety 11 | .599 | .319 | .291 |
| social appearance anxiety 5 | .593 | .389 | .319 |
| social appearance anxiety 6 | .551 | .406 | .364 |
| social appearance anxiety 9 | .234 | .857 | .153 |
| social appearance anxiety 8 | .325 | .841 | .166 |
| social appearance anxiety 10 | .416 | .571 | .350 |
| social appearance anxiety 3 | .248 | .154 | .755 |
| social appearance anxiety 2 | .268 | .043 | .715 |
| social appearance anxiety 1 | .117 | .249 | .674 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 5 iterations.

b country = germany, gender = woman

Factor Loading with Varimax Rotation of the Social Appearance Anxiety Scale

Rotated Component Matrix (a, b)

| item | Component | | |
|------------------------------|-----------|-------|------|
| | 1 | 2 | 3 |
| social appearance anxiety 9 | .873 | .104 | .088 |
| social appearance anxiety 8 | .833 | .022 | .299 |
| social appearance anxiety 16 | .820 | .349 | .106 |
| social appearance anxiety 13 | .777 | .197 | .227 |
| social appearance anxiety 7 | .732 | .326 | .172 |
| social appearance anxiety 6 | .683 | .419 | .232 |
| social appearance anxiety 12 | .677 | .291 | .210 |
| social appearance anxiety 14 | .676 | .489 | .179 |
| social appearance anxiety 4 | .568 | .526 | .193 |
| social appearance anxiety 10 | .562 | .228 | .426 |
| social appearance anxiety 15 | .178 | .841 | .133 |
| social appearance anxiety 5 | .424 | .664 | .194 |
| social appearance anxiety 1 | .179 | -.096 | .791 |
| social appearance anxiety 3 | .120 | .269 | .640 |
| social appearance anxiety 11 | .230 | .377 | .608 |
| social appearance anxiety 2 | .197 | .426 | .445 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 6 iterations.

b country = germany, gender = man

Factor Loading with Varimax Rotation of the Social Appearance Anxiety Scale

Rotated Component Matrix (a, b)

| item | Component | |
|------------------------------|-----------|------|
| | 1 | 2 |
| social appearance anxiety 13 | .855 | .270 |
| social appearance anxiety 16 | .836 | .307 |
| social appearance anxiety 9 | .814 | .201 |
| social appearance anxiety 8 | .809 | .229 |
| social appearance anxiety 12 | .798 | .212 |
| social appearance anxiety 10 | .797 | .207 |
| social appearance anxiety 11 | .783 | .260 |
| social appearance anxiety 15 | .769 | .245 |
| social appearance anxiety 14 | .747 | .333 |
| social appearance anxiety 6 | .741 | .405 |
| social appearance anxiety 7 | .704 | .390 |
| social appearance anxiety 4 | .667 | .475 |
| social appearance anxiety 5 | .644 | .484 |
| social appearance anxiety 2 | .119 | .857 |
| social appearance anxiety 3 | .283 | .806 |
| social appearance anxiety 1 | .353 | .392 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 3 iterations.

b country = korea, gender = woman

Factor Loading with Varimax Rotation of the Social Appearance Anxiety Scale

Rotated Component Matrix (a, b)

| item | Component | |
|------------------------------|-----------|-------|
| | 1 | 2 |
| social appearance anxiety 12 | .902 | .118 |
| social appearance anxiety 10 | .893 | .099 |
| social appearance anxiety 16 | .887 | .188 |
| social appearance anxiety 13 | .885 | .157 |
| social appearance anxiety 9 | .883 | .087 |
| social appearance anxiety 8 | .867 | .179 |
| social appearance anxiety 15 | .855 | .124 |
| social appearance anxiety 14 | .854 | .122 |
| social appearance anxiety 11 | .847 | .152 |
| social appearance anxiety 7 | .826 | .326 |
| social appearance anxiety 6 | .805 | .388 |
| social appearance anxiety 5 | .717 | .424 |
| social appearance anxiety 4 | .715 | .456 |
| social appearance anxiety 3 | .317 | .861 |
| social appearance anxiety 2 | .275 | .801 |
| social appearance anxiety 1 | .311 | -.367 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 3 iterations.

b country = korea, gender = man

9. Factor Loading with Varimax Rotation of the Body Checking Questionnaire

Rotated Component Matrix (a, b)

| item | Component | | | | | |
|------------------|-----------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| body checking 1 | .758 | .031 | .102 | .050 | .148 | .045 |
| body checking 9 | .681 | .083 | .103 | .164 | .312 | .023 |
| body checking 2 | .578 | .313 | .099 | .301 | -.104 | .038 |
| body checking 14 | .535 | .237 | .184 | .041 | .435 | .138 |
| body checking 6 | .488 | .029 | .189 | .335 | .209 | .214 |
| body checking 5 | .241 | .737 | .059 | .009 | .041 | -.034 |
| body checking 13 | -.033 | .674 | .288 | .039 | .117 | .113 |
| body checking 12 | -.054 | .653 | .205 | -.114 | .342 | -.178 |
| body checking 8 | .317 | .595 | .378 | .029 | .086 | -.023 |
| body checking 17 | .463 | .508 | -.137 | .287 | -.112 | .155 |
| body checking 21 | .077 | .506 | .115 | .345 | -.092 | .167 |
| body checking 11 | -.059 | .193 | .755 | .071 | .117 | .139 |
| body checking 15 | .252 | .228 | .656 | .107 | .070 | .212 |
| body checking 22 | .314 | .184 | .527 | .081 | .172 | -.285 |
| body checking 23 | .338 | .112 | .427 | .354 | -.079 | -.131 |
| body checking 3 | .089 | .324 | .355 | .284 | .286 | .331 |
| body checking 7 | .178 | .106 | .180 | .726 | .050 | -.111 |
| body checking 4 | .213 | -.078 | .080 | .684 | .157 | .053 |
| body checking 18 | -.067 | .189 | -.125 | .523 | .276 | .357 |
| body checking 19 | .149 | .117 | .139 | .054 | .759 | -.009 |
| body checking 10 | .228 | .010 | .016 | .273 | .639 | .209 |
| body checking 20 | .088 | -.016 | .061 | .041 | .111 | .784 |
| body checking 16 | .417 | .117 | .414 | -.056 | -.019 | .509 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 11 iterations.

b country = germany, gender = woman

Factor Loading with Varimax Rotation of the Body Checking Questionnaire

Rotated Component Matrix (a, b)

| item | Component | |
|------------------|-----------|------|
| | 1 | 2 |
| body checking 8 | .775 | .218 |
| body checking 1 | .766 | .153 |
| body checking 19 | .763 | .311 |
| body checking 9 | .753 | .340 |
| body checking 2 | .709 | .308 |
| body checking 6 | .707 | .296 |
| body checking 12 | .660 | .301 |
| body checking 5 | .643 | .105 |
| body checking 22 | .575 | .242 |
| body checking 14 | .567 | .509 |
| body checking 16 | .527 | .521 |
| body checking 17 | .525 | .412 |
| body checking 7 | .521 | .472 |
| body checking 23 | .506 | .445 |
| body checking 11 | .470 | .470 |
| body checking 20 | .031 | .747 |
| body checking 18 | .180 | .690 |
| body checking 4 | .191 | .681 |
| body checking 10 | .360 | .644 |
| body checking 3 | .328 | .625 |
| body checking 13 | .463 | .552 |
| body checking 15 | .491 | .528 |
| body checking 21 | .381 | .436 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 3 iterations.

b country = korea, gender = woman

Factor Loading with Varimax Rotation of the Body Checking Questionnaire

Rotated Component Matrix (a, b)

| item | Component | | |
|------------------|-----------|------|------|
| | 1 | 2 | 3 |
| body checking 18 | .826 | .266 | .092 |
| body checking 20 | .821 | .257 | .149 |
| body checking 21 | .765 | .264 | .286 |
| body checking 15 | .676 | .209 | .422 |
| body checking 14 | .673 | .528 | .155 |
| body checking 13 | .667 | .298 | .511 |
| body checking 19 | .645 | .606 | .215 |
| body checking 3 | .599 | .340 | .297 |
| body checking 16 | .558 | .544 | .336 |
| body checking 6 | .387 | .772 | .232 |
| body checking 7 | .385 | .771 | .108 |
| body checking 1 | .124 | .764 | .290 |
| body checking 2 | .078 | .688 | .426 |
| body checking 9 | .510 | .657 | .205 |
| body checking 10 | .585 | .621 | .172 |
| body checking 23 | .317 | .585 | .317 |
| body checking 4 | .543 | .584 | .217 |
| body checking 8 | .383 | .580 | .374 |
| body checking 5 | -.040 | .316 | .733 |
| body checking 22 | .359 | .169 | .605 |
| body checking 11 | .482 | .187 | .589 |
| body checking 12 | .478 | .299 | .572 |
| body checking 17 | .473 | .358 | .516 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 12 iterations.

b country = korea, gender = man

10. Factor Loading with Varimax Rotation of the Body Shame subscale of the OBCS

Rotated Component Matrix (a, b)

| item | Component | |
|--------------|-----------|-------|
| | 1 | 2 |
| body shame 2 | .818 | -.105 |
| body shame 3 | .816 | .101 |
| body shame 8 | .673 | .349 |
| body shame 4 | .480 | .417 |
| body shame 6 | .462 | .294 |
| body shame 5 | -.144 | .772 |
| body shame 7 | .370 | .680 |
| body shame 1 | .457 | .486 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 3 iterations.

b country = germany, gender = woman

Rotated Component Matrix (a, b)

| item | Component | | |
|--------------|-----------|-------|-------|
| | 1 | 2 | 3 |
| body shame 4 | .794 | .214 | .105 |
| body shame 6 | .785 | -.010 | .102 |
| body shame 8 | .546 | .372 | -.189 |
| body shame 2 | .015 | .890 | -.090 |
| body shame 1 | .171 | .635 | .274 |
| body shame 3 | .431 | .536 | -.027 |
| body shame 5 | -.157 | .088 | .755 |
| body shame 7 | .260 | -.038 | .733 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 6 iterations.

b country = germany, gender = man

Factor Loading with Varimax Rotation of the Body Shame subscale of the OBCS

Component Matrix (a, b)

| item | Component |
|--------------|-----------|
| | 1 |
| body shame 1 | .793 |
| body shame 2 | .770 |
| body shame 3 | .757 |
| body shame 8 | .737 |
| body shame 7 | .574 |
| body shame 6 | .566 |
| body shame 4 | .549 |
| body shame 5 | .454 |

Extraction Method: Principal Component Analysis.

a 1 components extracted.

b country = korea, gender = woman

Rotated Component Matrix (a, b)

| item | Component | | |
|--------------|-----------|-------|-------|
| | 1 | 2 | 3 |
| body shame 2 | .850 | .196 | .017 |
| body shame 3 | .784 | .217 | -.153 |
| body shame 1 | .611 | .319 | .187 |
| body shame 4 | .089 | .785 | -.006 |
| body shame 8 | .290 | .754 | .097 |
| body shame 6 | .351 | .632 | -.094 |
| body shame 5 | -.259 | .216 | .793 |
| body shame 7 | .361 | -.276 | .714 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 6 iterations.

b country = korea, gender = man

11. Factor Loading of the Body Shame subscale of the WEB-SG

Component Matrix (a, b)

| | Component |
|--------------|-----------|
| item | 1 |
| body shame 1 | .872 |
| body shame 3 | .856 |
| body shame 2 | .843 |
| body shame 4 | .790 |
| body shame 6 | .712 |
| body shame 5 | .603 |

Extraction Method: Principal Component Analysis.

a 1 components extracted.

b country = germany, gender = woman

Component Matrix (a, b)

| | Component |
|--------------|-----------|
| item | 1 |
| body shame 1 | .853 |
| body shame 2 | .842 |
| body shame 3 | .819 |
| body shame 4 | .770 |
| body shame 6 | .631 |
| body shame 5 | .609 |

Extraction Method: Principal Component Analysis.

a 1 components extracted.

b country = germany, gender = man

Factor Loading of the Body Shame subscale of the WEB-SG

Component Matrix (a, b)

| | Component |
|--------------|-----------|
| item | 1 |
| body shame 4 | .799 |
| body shame 3 | .790 |
| body shame 2 | .777 |
| body shame 1 | .773 |
| body shame 6 | .727 |
| body shame 5 | .668 |

Extraction Method: Principal Component Analysis.

a 1 components extracted.

b country = korea, gender = woman

Component Matrix (a, b)

| | Component |
|--------------|-----------|
| item | 1 |
| body shame 4 | .849 |
| body shame 3 | .819 |
| body shame 5 | .817 |
| body shame 2 | .798 |
| body shame 6 | .790 |
| body shame 1 | .717 |

Extraction Method: Principal Component Analysis.

a 1 components extracted.

b country = korea, gender = man