

Critical Factors of Social Physique Anxiety: Exercising and Body Image Satisfaction

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This study aimed to examine the critical roles of exercising and body image satisfaction on social physique anxiety (SPA) among female university students. For this aim, 118 female university students, 58 of whom exercised regularly, participated in the study. The Social Physique Anxiety Scale, Eating Attitudes Test, and Liebowitz Social Anxiety Scale were administered to the participants; their dieting habits were also investigated. Results revealed that approximately half of the participants used at least one unhealthy weight control method in the past 6 months. An analysis of covariance indicated that, after controlling for the effects of abnormal eating behavior, participants who were dissatisfied with their body image and did not participate in a regular exercise activity experienced higher social physique anxiety. However, such a tendency was not found for social anxiety. Thus, these characteristics seem to be specific to social physique anxiety. It was concluded that individuals who have negative view of their appearance were more prone to experience SPA, and they might be avoiding exercise for self-presentational purposes. Findings were discussed in the light of literature.

■ *Keywords:* social physique anxiety, body image dissatisfaction, exercising

Recently, there has been tremendous emphasis of society on physical beauty (Eagly, Ashmore, Makhijani, & Longo, 1991). Mass media and other sociocultural influences set unrealistic standards of beauty (Stice, Schupak-Neuberg, Shaw, & Stein, 1994), and especially women tend to evaluate their appearance with reference to these standards that are difficult to attain (Brownell, 1991). This leads to a decrease in body image satisfaction (Heinberg, 1996), and an increase in body image disturbances and eating disorders (Fredrickson & Roberts, 1997). It is also known that greater differences between actual and ideal body image lead to increased levels of body image dissatisfaction (Rosenblum & Lewis, 1999).

In line with these emphases on physical appearance, recent research focused on social physique anxiety (SPA). SPA is the form of social anxiety that is found to be highly related to body image dissatisfaction and eating disorders. Striegel-Moore, Silberstein and Rodin (1993) suggest that when people consider themselves physically inadequate, they feel self-conscious and socially anxious. Izgiç, Akyüz, Doğan, and Kuğu (2004) suggest that body image perception of social phobics is more disturbed than other people. This increase in self-focused attention also leads to an increase in social anxiety (Ingram, 1990). Previous research confirms that social

anxiety is a common element in all forms of body image disturbances. According to Hinrichsen, Wright, Waller, and Meyer's (2003) study, which compared eating disordered (ED) females with nonclinical controls, ED patients were reported to be significantly more anxious in social situations than the nonclinical participants. Thus, eating attitudes and/or problems seem to be closely associated with various anxiety symptoms. It was also suggested that in most cases, symptoms of eating disorders tend to begin following a stressful social situation (Steiger, Gauvin, Jabalpurwala, Seguin, & Stotland, 1999).

Like socially anxious individuals, people with high SPA aim to make a positive impression on others, and they are afraid of being negatively evaluated (Shenkler & Leary, 1982). However, in SPA individuals feel anxious, particularly in terms of their physical appearance. Therefore, SPA is the fear of being negatively evaluated regarding one's physical appearance (Hart, Leary, & Rejeski, 1989). Individuals high in SPA feel anxious in most situations where their body is open to the gaze of the public (Diehl, Johnson, Rogers, & Petrie, 1998), and they tend to engage in avoidance behaviours, or camouflaging to decrease the likelihood of being criticised (Smith, 2004). High SPA is especially common among females, and particularly among adolescents and young adults. It is proposed that preoccupation with body shape and weight is highly correlated with SPA (Aşçı, Tüzün, & Koca, 2006; Baş, Aşçı, Karabudak, & Kızıltan, 2004; Diehl, et al., 1998; Hausenblas & Mack, 1999; Lantz, Hardy, Ainsworth, 1997; Mack, Strong, Kowalski, & Crocker, 2006). Haase, Mountford, and Waller (2006) suggest that SPA is one of the maintaining factors of body image disturbance seen in eating disorder. Thus, perceived body image seem to be a crucial factor for SPA.

Dieting is one of the most common methods used to alter body shape and size. The term 'dieting' includes various methods of losing weight such as fasting, skipping meals, consuming low calorie food, and using appetite suppressants (Brownell & Rodin, 1994). In today's society, dieting is a kind of normative discontent (Polivy & Herman, 1987), and is particularly common among women (Ackard, Croll, & Kearney-Cooke, 2002). Dieting is frequently and closely associated with unhealthy eating behaviors and body image dissatisfaction (Polivy & Herman, 1987).

Like dieting, exercise is another popular method that individuals use to enhance their physical appearance (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Yates, Edman, Crago, & Crowell, 2001). Exercising has been widely used as a strategy to control body weight (Hubbard, Gray, & Parker, 1998) and many researchers emphasise the common ground between exercising and eating disorder, especially in anorexia nervosa (Yates et al., 2001). According to Davis, Woodside, Olmsted and Kaptein (1999) excessive exercising is one of the factors that precipitate disordered eating habits. Further evidence comes from Hausenblas and Fallon (2002), who suggest that many subjects start restricting food intake following periods of excessive exercise. Furthermore, Greenleaf, McGreer, and Parham (2006) suggest that exercisers generally have body image ideals that are difficult to attain, and they are also more self-conscious about their body images. Therefore, exercising is a critical factor with those who focus their attention on their physical appearance. Thus, in examining SPA this factor deserves a close attention.

The relationship between exercising behavior and body image satisfaction has been extensively researched. Regarding the relationship between exercising and body image dissatisfaction, Davis (2004) discusses the importance of 'halo effect',

which can be summarised as the belief that periods of excessive exercise will be followed by increased body satisfaction. Similarly, Duncan, Al-Nakeeb, Nevill, and Jones (2004) report that exercising regularly serves as a protective factor against body image dissatisfaction. Individuals' reasons for exercising may vary, including pleasure, friendship, health and joy, as well as shape and weight-related concerns (Hausenblas, Brewer, & Van Raalte, 2004). Results of studies investigating the relationship between reasons for exercising and body image dissatisfaction indicate that individuals exercising for food related or self-presentation purposes experience greater body image dissatisfaction (Ingledeew & Sullivan, 2002; Strelan, Mehafey, & Tiggemann, 2003; Tiggemann, & Williamson, 2000), and they are more inclined to develop eating disorder symptoms and unhealthy eating patterns (Furnham, Badmin, & Sneade, 2002; Hausenblas, Brewer, & Van Raalte, 2004; Hausenblas & Fallon, 2006; Hausenblas & Symons-Downs, 2001; Hubbard, Gray & Parker, 1998). On the other hand, it is also suggested that exercising can be used as a method in the treatment of eating disorders and body image dissatisfaction (Gehrman, Hovell, Sallis, & Keating, 2006; Williams & Cash, 2001), because exercising results in an increased body image satisfaction (Davis, 2004; Hausenblas & Fallon, 2006) and healthy eating (Augestad & Flanders, 2002).

SPA is strongly associated with both exercising and dieting. It is suggested that both are methods of coping with high SPA (Crocker et al., 2003; Lantz, Hardy, & Ainsworth, 1997; Sabiston, et al. 2007). Thompson and Chad (2002) suggest that SPA in adolescents is highly correlated with unhealthy eating habits and weight control methods. Many researchers have emphasised the relation between exercising and SPA (Hausenblas, Brewer, & Van Raalte, 2004; Hausenblas & Fallon, 2006; Koca & Aşçı, 2006). Aşçı and colleagues (2006) suggest that people with high SPA are more likely to engage in exercise behavior than those with low SPA. This can be related to the belief that exercising will make the body look better, which will in turn lead to a reduction in SPA. On the other hand, Koca and Aşçı (2006) suggest that high SPA individuals are less comfortable in exercise settings because of their fear of being seen by others, so they might also avoid exercising. In accordance with both perspectives, in a study (Frederick & Morrison, 1996) both nonexercisers and excessive exercisers were found to have high SPA.

In contrast, some recent studies suggest that exercising is not associated with SPA (Aşçı, Tüzün, & Koca, 2006; Mülazımoğlu-Ballı & Aşçı, 2004; Mülazımoğlu & Aşçı, 2004). Considering this contradictory information about the orientation of the relationship between SPA and exercise behavior, it is suggested that perceived body image can be a crucial variable that determines the orientation of this relationship. That is, for those who are satisfied with their body images, this association may not be observed; on the other hand, for those who are dissatisfied with their body image this association may be clearer. A similar relationship can also be proposed for dieting behavior, as both dieting and exercising are associated with SPA and considered as methods for controlling high SPA (Sabiston et al. 2007).

In conclusion, the present study aims to examine the differences between exercising and nonexercising female university students in terms of social physique anxiety. It is expected that perceived body image will also be an important factor for this difference. Furthermore, it is expected that these differences should be specific to SPA, and should not be observed in other forms of anxiety, like social anxiety.

Method

Participants

Participants comprised 118 female university students aged between 17 and 25 ($M = 20.07$, $SD = 1.63$). Based on the Body Mass Index (BMI) 32 (32.2%) of the participants were underweight ($BMI < 19$), 72 (61%) of them were normal weight (BMI between 19–24), and 8 (6.8%) were overweight ($BMI > 24$). Fifty-six (47.5%) of the participants regularly visited the sports centre of the university voluntarily to participate in different aerobic gymnastics classes such as step and aerobic gymnastic. The time they spent exercising varied between 1 to 10 hours weekly ($M = 3.48$, $SD = 2.04$). The other 62 (52.5%) participants were not engaged in any kind of sports activity. For the exercisers ($n = 56$) mean age was 20.05 ($SD = 1.67$), and for the nonexercisers ($n = 62$) it was 20.08 ($SD = 1.61$).

Measures

Personal Data Sheet. On this sheet participants were asked to report their height and weight, and they were also asked to rate their body image satisfaction on a 5-point scale ranging from (1) *extremely dissatisfied* to (5) *extremely satisfied*. Finally, they were asked to mark the methods they have engaged in to alter their body shape and weight during the past 6 months. The list given to them included low calorie diets, dieting pills, skipping meals, laxative use, vomiting, fasting, low protein diets, and dieting while consulting a dietitian.

Social Physique Anxiety Scale (SPAS). A 12-item self-report questionnaire that measures the individuals' anxiety regarding their physical appearance. It is a 5-point Likert type scale, in which the scores range from 12 to 60. It was originally developed by Hart and colleagues (1989). Mülazımoğlu-Ballı and Aşçı (2004) reported the Turkish version of SPAS as having adequate reliability and validity coefficients. In the present study, Cronbach's alpha coefficient of the scale was found as .77.

Eating Attitudes Test (EAT-40). A self-report questionnaire developed by Garner and Garfinkel (1979) to measure abnormal eating behavior. It is composed of 40 items rated on a 6-point Likert-type scale. The psychometric properties for the Turkish version of the EAT-40 has been examined by Doğan (1985). He concluded that EAT-40 has been a reliable tool that measures eating attitudes and behaviors. In the present study, Cronbach's alpha score for the scale was found to be .77.

Liebowitz Social Anxiety Scale. The Liebowitz Social Anxiety Scale consists of 24 items rated on a 3-point Likert type scale for both 'fear of anxiety' and 'avoidance behaviour'. It was developed by Liebowitz (1987) to assess difficulties that social phobic individuals experience in certain social situations. The Turkish version of the scale was established by Soykan, Özgüven, and Gençöz (2004), and they reported psychometric properties of the scale as sufficient. In the present study the whole scale score was used, and the Cronbach's alpha coefficient for this scale was found as .93.

Procedure

The questionnaires were administered to the nonexercising participants during their class hours. The exercising participants completed the questionnaires before exercising. Prior to the administration of the questionnaires, the participants completed the informed consent form. The questionnaires were presented in a counter-

balanced order to eliminate influence of ordering. It took about 30 minutes for the participants to fill out the questionnaires.

Results

Sample Characteristics

Descriptive analyses revealed that 58 (49.2%) of the participants had used different methods to alter their body weight in the past 6 months. Thirty-one (55.4 %) of the exercising participants and 27 (43.5%) of the nonexercising participants reported having used at least one of these methods to lose weight in the past 6 months. The methods that had been used most frequently were skipping meals on purpose to lose weight ($n = 34, 28.8\%$), being on low calorie diets ($n = 24, 20.3\%$), and low protein diets ($n = 14, 11.9\%$). The participants who reported using these methods to alter their body weight were found to have significantly higher BMI ($M = 21.01, SD = 2.69$), as compared to participants who did not engage in any of these methods ($M = 19.3, SD = 1.65$), $F(1, 116) = 17.53, p < .05$. Furthermore, there was a difference between these two groups in terms of weight fluctuations, $F(1, 113) = 6.26, p < .05$. Participants who used different methods to alter their body weight in the past 6 months experienced greater weight fluctuation, ($M = 9.72, SD = 8.83$) when compared to others ($n = 58, M = 6.62, SD = 3.28$) who did not engage in any of these practices. These two groups also differed in terms of SPA, $F(1, 116) = 5.35, p < .05$. The participants who did not use any methods to alter their body weight reported experiencing significantly less SPA, ($M = 31.05, SD = 6.96$) compared to those using different methods to alter their body weight ($M = 33.91, SD = 6.48$).

Correlation coefficients of SPAS, EAT-40, and Liebowitz Social Anxiety Scale are shown in Table 1. As can be seen from the table, all these three variables were significantly and positively correlated with each other.

In order to group the participants according to their descriptions about their body image, participants were divided into two groups depending on their satisfaction with their body images. Participants who had evaluated their body image satisfaction as *extremely satisfied*, *satisfied*, or *neutral* formed the group who were satisfied with their body image. Participants who had evaluated their body image satisfaction as *dissatisfied* and *extremely dissatisfied* formed the group who were dissatisfied with their body image. This classification was made according to the median score of this scale. Regarding this classification, the whole sample was divided into two groups: those who were satisfied with their body image ($n = 62, 52.5\%$) and those who were dissatisfied with their body image ($n = 56, 47.5\%$). Chi-square analysis revealed that 44 (61.1%) of the participants with a normal BMI and 4 (10.5%) of the participants

TABLE 1
Correlations Between SPAS, EAT 40, and LSAS

	SPAS	EAT 40
EAT 40	.39**	
LSAS	.22*	.19*

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

SPAS = Social Physique Anxiety Scale, EAT 40 = Eating Attitudes Test, LSAS = Liebowitz Social Anxiety Scale

TABLE 2

Means and Standard Deviations of SPAS, EAT-40 and Liebowitz Social Anxiety Scales for the groups and the Total Sample

	Exercisers				Nonexercisers			
	Body image: Satisfied		Body image: Dissatisfied		Body image: Satisfied		Body image: Dissatisfied	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
SPAS	31.19	5.6	30.76	7.48	30.71	6.20	36.84	6.43
EAT 40	14.87	8.72	15.36	11.54	13.26	7.91	17.48	9.64
Liebowitz	32.80	18.65	36.08	21.08	37.32	19.20	41.76	19.77

Note: SPAS = Social Physique Anxiety Scale, EAT 40 = Eating Attitudes Test, LSAS = Liebowitz Social Anxiety Scale.

who can be categorised as 'underweight' according to BMI were dissatisfied with their body image, $\chi^2(1, N = 118) = 35.03$.

Twenty-five (55.4 %) of the exercising participants and 31 (50 %) of the nonexercising participants were dissatisfied with their body images. Table 2 presents means and standard deviations of the variables used in the analyses, which are listed according to the levels of exercising status and body image satisfaction.

Associations of Exercising Status and Body Image Satisfaction with SPA

To examine the SPA of the participants according to the exercising status and body image satisfaction, a 2 (Exercising status) \times 2 (Body Image Satisfaction) between subjects ANCOVA was carried out, where the covariate factor was EAT 40, and the dependent variable was SPAS. The results indicated that even after controlling for the significant influences of EAT 40, $F(1, 117) = 18.08, p < .05$, nonexercising group experienced significantly more SPA ($M = 33.77$) than the exercising group ($M = 31.00$), $F(1, 117) = 6.12, p < .05$. Participants who were dissatisfied with their body image also experienced significantly more SPA ($M = 36.50$) than the group who were satisfied with their body images ($M = 29.87$), $F(1, 117) = 4.09, p < .05$. Furthermore, results indicated a significant interaction effect, $F(1, 117) = 6.40, p < .05$ (see Figure 1). Tukey analyses conducted for this interaction effect revealed that for the non-exercising group, participants who were dissatisfied with their body images experienced greater level of SPA than those who were satisfied with their body images. Similarly, among the group of participants who were dissatisfied with their body images, the participants exercising regularly had lower SPA as compared to the nonexercising group. Other mean differences were not significant. Thus, people who were dissatisfied with their body image but do not engage in exercising activities constituted the risk group for SPA.

Association of Exercising Status and Body Image Satisfaction with Social Anxiety: A Discriminative Analysis

To reveal the specificity of these factors to SPA, a similar analysis was carried out with social anxiety. Thus, a 2 (Exercising status) \times 2 (Body Image Satisfaction) between subjects ANCOVA was run with the Liebowitz Social Anxiety Scale as the

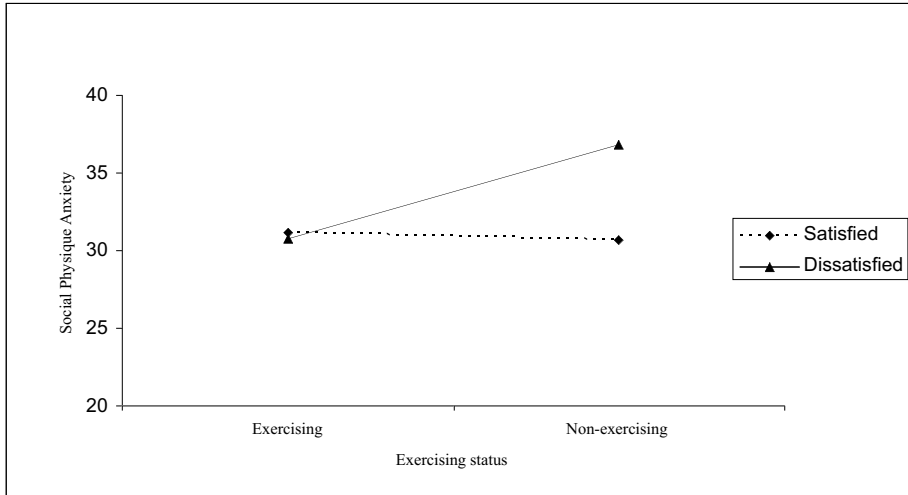


FIGURE 1
The interaction between exercise status and body image satisfaction on SPAS scores.

dependent variable and EAT 40 as the covariate variable. Results indicated that EAT 40 is significant as a covariate, $F(1,111) = 3.96, p < .05$. However, there was no significant main effect of Exercising Status $F(1, 111) = 1.98, p > .05$, Body image satisfaction $F(1, 111) = .68, p > .05$, or their interaction $F(1, 111) = .00, p > .05$. Thus, this analysis supported that, not exercising and being dissatisfied with one’s body image were critical factors specific to SPA. These findings could not be generalised to other forms of anxiety, like social anxiety.

Discussion

The main purpose of the present study was to examine the critical roles of exercising and body image satisfaction on SPA. Results indicated that nonexercising participants experienced higher level of SPA than their exercising counterparts. Similarly, the participants who were dissatisfied with their body image experienced higher level of SPA as compared to those who were satisfied. Consequently, the particular combination of these two conditions was revealed as the critical combination for SPA. It should also be underlined that these factors seemed to be critical only for SPA, but not for other forms of anxiety like social anxiety. Thus, these findings have supported the hypothesis that nonexercising individuals and those who experienced dissatisfaction with their body images were more predisposed to have high SPA.

For people with high SPA exercising seems to be like a double-edged sword. They tend to avoid exercise locations like gyms because at those places the human body is open to the gaze of the public (Koca & Aşçı, 2006). Thus, they become more self-conscious about their physical appearance, which further increases their SPA, and hence they prefer to avoid those places. However, as they avoid these places they tend to reduce their physical activity levels (Lantz, Hardy, & Ainsworth, 1997) and they come to be more dissatisfied with their body images, which further increases the SPA. In short, high SPA among these individuals leads to a vicious cycle that also

disables improvements in body image. However, regular exercisers, regardless of their satisfaction with their body image, tend to experience less anxiety about their physique (Hausenblas & Mack, 1999). It has been stated that participating in exercising activity regularly can lead to drastic changes in the level of body image dissatisfaction experienced by the individuals (Davis, 2004; Diehl, 1995). Regular exercise by itself may be decreasing body image dissatisfaction and in turn lead to a decrease in SPA. In the light of these arguments, it has been suggested that physical exercise can be used as a method for treating high SPA.

Thus, exercising status seems to be a critical issue for SPA. Individuals with high SPA do not prefer exercising due to their fear of being seen and criticised by others. They avoid exercising altogether and thus engage in other methods for controlling their physical appearance, hence their SPA. For instance, dieting is seen as an alternative method to exercising for controlling SPA (Crocker, Sabiston, Forrester, Kowalski, Kowalski, & McDonough, 2003). In fact, regardless of whether they exercise or not, approximately half of the participants (49.2%) of the current study reported having tried to lose weight mainly by restricting food intake (i.e., skipping meals, fasting, or low calorie diets) in the past 6 months, but individuals who use these methods reported experiencing significantly higher levels of SPA when compared with individuals who did not use any of these methods in the past 6 months. This raises the question of whether SPA is the greatest motive behind dieting. It is highly possible that high SPA individuals, who avoid exercising with self-presentational concerns, are using food restriction as a means of appearance enhancement, and thus to control SPA.

Besides its relationship to SPA, use of weight control methods are of great importance in today's society, where being physically attractive is equated with being thin. The fact that nearly half of the participants reported at least one attempt to lose weight underlines the high rates of dieting among female university students. This finding is also in accordance with findings of Ackard, Croll, and Kearney-Cooke (2002), who found that 68% of the normal weight women dieted at least once in their lives. Overall these studies indicate the high rates of dieting behavior and importance of controlling body weight in the society, especially among young women. This finding also provides support for Polivy and Herman's (1987) suggestion that the description of 'normal' eating has changed during the last few decades. According to them, normal eating now requires periodic dieting and eating disorders are linked to these new eating patterns.

The high rate of dieting behaviour among the participants is thought to be related to the way that the individuals perceive their body images. SPA is not related to objective measures; in other words, it is not directly associated with actual weight/height ratios of individuals. Rather, SPA is related to how individuals categorise themselves with respect to the image of themselves on their mind. Rather than having a realistic view of their body and weight, females in today's society tend to overestimate their body sizes (Polivy & Herman, 1987). Even an individual who falls into the category of underweight based on her BMI scores may rate herself as fat, and feel dissatisfied with her body image. This trend is associated with sociocultural factors, such as influence of social environment and media (Fallon & Hausenblas, 2005). Because of the heavy emphasis on a thin ideal by society, females may be more inclined to overestimate their body size and thus feel dissatisfied with their body images, which is associated with higher SPA.

Therefore, the present study reveals the importance of both nonexercising and having a negative body image for SPA, but not for other types of anxiety like social anxiety. Thus, these two factors seem to be specific to SPA. Though studies have focused on the influences of these two factors separately, the authors consider this the first study to consider these two factors in the same design, and the results show that the combination of these two risk factors constitute an important vulnerability.

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