

The Relationship of Gender and Self-Efficacy on Social Physique Anxiety among College Students

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ABSTRACT

International Journal of Exercise Science 8(3): 234-242, 2015. The anxiety or fear associated with physique evaluation is defined as Social Physique Anxiety (SPA). Numerous studies have examined this construct, yet a gap exists exploring this phenomenon among current college students with SPA, self-efficacy, and gender concurrently. Therefore, the purposes of this study included quantitatively analyzing the association between SPA, gender, and self-efficacy. Participants included 237 students at a Southeastern university participating in jogging, body conditioning, or weight training courses. Analysis of Variance yielded a significant main effect for self-efficacy as well, as those with lower self-efficacy displayed higher levels of SPA ($p < 0.001$). Stepwise regression analysis indicated self-efficacy and gender were both significant predictors of SPA. This information could aid in creating interventions designed to decrease the prevalence of SPA and increase levels of self-efficacy among the current college student population.

KEY WORDS: Self-presentation theory, body image concerns, exercise

INTRODUCTION

In present society, it is a common occurrence for one's body to be on constant display. This can lead one to experience to an array of emotions, as any social context is subject to human opinion and judgment (10). To provide a theoretical framework for this phenomenon, self-presentation theory suggests that individuals attempt to influence the perceptions of those around them (17). According to these authors, persons may bring special attention to certain aspects of the self that they are fond of (personality aspects or accomplishments) while deemphasizing others that cause

particular amounts of stress or anxiety (i.e. physique or body image). Further, an awareness of the perceptions others have can often lead to anxiety associated with behavior or performance in social settings, which may lead to feelings of inferiority thereby decreasing one's self-esteem.

Self-presentation is often a goal-oriented behavior; those who present themselves to others are typically aware that they are doing so and therefore take specific actions in attempting to form a particular impression in the minds of those surrounding them (17). Specific motivations behind achieving one's goal of a positive

self-presentation include the longing for confirmation of one's own self-perceptions, peer approval, respect, fear of the negative perceptions of others, or seeking a sense of autonomy. The awareness of the interaction between one's own self-perceptions and the perceptions of those around them in a social setting can cause feelings of anxiety to occur and thereby eliciting the response of having self-presentational apprehensions.

Sport and exercise environments play an important role in the examination of self-presentation. It has been found that self-presentation impacted one's choice of exercise environment, as individuals who felt they were being evaluated negatively by those around them avoided exercise settings in which their bodies would be on display (i.e. aerobics classes, jogging areas, or swimming pools). This fear of negative self-perception lead to exercise avoidance to reduce or eliminate feelings of social anxiety (13).

This fear has been defined as social physique anxiety (SPA), or feelings of anxiety as a result of having one's physique evaluated by others (8). SPA is a derivative of social anxiety directly related to the responses of the social judgment of one's physique. Physique was operationally defined as "one's body form and structure, specifically body fat, muscle tone, and general body proportions" (8). These anxious feelings are due to the social environment of exercise, thus creating anxiousness related to self-presentation and having one's body on display (5).

Popular exercise environments, such as gyms or health clubs, are often

characterized by masses of people engaging in aerobics or resistance activities that present the body moving in a variety of ways. This can be either facilitative or debilitating for those who engage in exercise. Research has found that for those who may lack confidence in their own self-images, perhaps feeling overweight or lacking muscle tone, experienced feelings of unease and discouragement regarding exercise participation. The opposite was also found to be true as those who perceived themselves as being physically fit and having a slender physique enjoyed participating in exercise (9).

Exercise environment has also been shown to influence exercise-induced anxiety levels among women. Individuals with high levels of SPA have shown that exercising in a naturalistic environment was associated with increased distress among women with high levels of SPA as opposed to laboratory settings, indicating that public exercise settings may have been related to increased anxiety for women (6). In efforts to quantify the prevalence of SPA among individuals, the SPA scale was developed to measure feelings related to displaying physique in social settings and found that women with high levels of SPA feel more stressed in exercise situations and environments (8).

Another construct closely related to social physique anxiety is the relationship between SPA and self-efficacy. The theory of self-efficacy suggests that people have a tendency to engage in activities that allow them to feel competent and increase self-confidence, including personal health habits (1). Individuals may attempt to avoid situations causing anxiety due to uncertainty of skill competence or coping

ability, whereas those situations where one feels efficacious increased feelings of self-confidence, reduced anxiety levels, and improved mood (2). With heightened feelings of anxiety, those who have lower self-efficacy have a tendency to avoid certain exercise settings due to lack of perceived ability.

Feelings of efficaciousness directly relate to one's comfort level regarding displaying physique in certain settings. Further research examined the effects of exercise environment on perceived self-efficacy. Results indicated that women experienced significantly decreased self-efficacy levels while SPA levels rose when exercising in front of a mirror. It was also found that as SPA increased, levels of self-efficacy declined among both men and women regardless of exercise setting (12).

While previous research has also focused on identifying the relationship between SPA and women (5, 6, 8), there is a paucity of literature examining both men and women with regard to SPA prevalence. Self-efficacy has also been analyzed from this perspective (1, 12), but a void exists examining both genders and SPA in individuals with varying degrees of self-efficacy. This information may aid in creating interventions designed to decrease the prevalence of SPA (18) and increase levels of self-efficacy among college-aged students from a perspective that is gender sensitive. In turn, increased knowledge about the effects of gender and self-efficacy on levels of SPA of college students may be beneficial in creating exercise environments that allow all participants to feel confident and comfortable displaying their physique. Feeling more comfortable in an exercise

environment may in turn increase the frequency of exercise among this particular demographic.

A gap exists in this body of literature pertaining to the present population of college students. According to the United States Department of Health and Human Services, the 2008 Physical Activity guidelines recommend a minimum of 150 minutes of moderate intensity exercise or 90 minutes of vigorous intensity exercise per week (21). However, research has indicated that only 52.4% of current college students adhere to these guidelines (3). It has been found that exercise frequency between both healthy and overweight college students was linked to the individual's perceptions of exercise and health. Students who perceived exercise to be positive and rewarding (i.e. to improve health or physical appearance, release stress, and increase self-esteem) were more likely to engage in physical activity on a regular basis as opposed to their less active counterparts. It was also indicated that barriers to exercise included lack of time or motivation, little social support, and lack of confidence (7). In order to increase the frequency of exercise among this population, it may be necessary to have a greater understanding of the association between exercise behaviors, SPA, and self-efficacy.

Given the aforementioned research, the purpose of the present study was to analyze the association between SPA, gender, and self-efficacy levels among college-aged students enrolled in physical activity courses. The hypotheses for this study were threefold. First, it was hypothesized that those with higher levels

of self-efficacy would display lower levels of SPA. Additionally, it was expected that that women would display higher levels of SPA than males. Finally, it was hypothesized that self-efficacy and gender would both account for a significant proportion of variance in predicting social physique anxiety.

METHODS

Participants

Participants included 237 male ($n = 99$) and female ($n = 139$) undergraduate students (ages 18-24) enrolled in physical activity classes. The physical activity courses represented by this sample included body conditioning ($n = 42$; 39.6%), jogging ($n = 38$; 35.8%), and weight training ($n = 26$; 24.5%). At this institution, all undergraduate students must enroll in two physical activity courses to fulfill graduation requirements. Therefore, a convenience sample consisting of fitness-based physical activity courses was chosen to control for the prevalence of SPA among participants, as previous research has indicated individuals partaking in fitness-based courses had the likelihood of displaying varying levels of SPA (18). To determine high and low self-efficacy scores based on Physical Self-Efficacy (PSE) scale responses for data analyses, the mean was calculated for the total sample ($n = 237$, $M = 87.34$, $SD = 15.41$) and then separated based on the standard deviation. In order to isolate the extreme ends of high and low levels of self-efficacy for statistical comparison, scores which were at least one half of a standard deviation above the mean ($M = 95.05$) represented high levels of self-efficacy; those scores at least one half of a standard deviation below the mean ($M =$

79.63) represented low levels of self-efficacy. Thus, the final sample for the statistical analyses included only those defined as having high or low levels of self-efficacy totaled 154 male ($n = 70$) and female ($n = 84$) participants (M age = 20.16 years, $SD = 1.94$). Ethnicities of the participants included Caucasian ($n = 89$; 57.8%), African-American ($n = 49$; 31.8%), Asian/Pacific Islander ($n = 1$; 0.6%) Hispanic/Latino ($n = 5$; 3.2%), Multi-racial ($n = 7$; 4.5%), and other ($n = 3$; 1.9%). All participants were currently enrolled at a Southeastern university.

Prior to the start of data collection, Institutional Review Board approval was granted. All participants were asked to voluntarily participate and were informed that they may choose to stop data collection at any time throughout the study. Each participant gave written consent prior to participating in the study.

Protocol

The Social Physique Anxiety Scale (SPAS) originally consisted of 12-items (8). In recent years the measure was altered, which reduced it to seven items scored on a 5-point Likert-type scale with anchors including 1 (not at all) to 5 (extremely) (14). Items included phrases such as, "When I look in the mirror I feel good about my physique/figure," or "In the presence of others I feel apprehensive about my physique/figure" (8, 14). The use of this 7-item scale in measuring SPA levels was validated for a college-aged population (19). Internal consistency values for this scale were calculated at 0.72 (15). The present study found Cronbach's alpha values for the SPA-7 to be $\alpha = 0.89$.

The Physical Self-Efficacy scale (PSE) consists of 22 items in which participants rate their perceived physical competence levels (16). Items are ranked on a 6-point Likert-type scale with 1 indicating the participant "strongly agrees" with the statement and 6 indicating, "strongly disagrees" with the statement. An overall PSE score is calculated, on a scale of 22 to 132. Higher ratings indicate higher levels of perceived efficaciousness of the physical self with regards to each item. Internal consistency values of the subscales along with the overall scale were found to be 0.92 (16). In the present study, the internal consistency values for the total scale were calculated to be $\alpha = 0.83$, as only the total scale scores were used for data analysis.

Data collection took place once in each physical activity class during the first six weeks of the academic semester, which included the administration of the SPA-7 and PSE scales by the principal investigator. Participants took approximately 20 minutes to complete these questionnaires. Questionnaire packets were counterbalanced to avoid the possibility of fatigue and order effects among participants.

Statistical Analysis

Descriptive statistics including means and standard deviations were calculated from the participants' responses. Data were analyzed using the SPSS version 21 statistical software package. A two (gender) by two (self-efficacy level) ANOVA was carried out to determine if there were significant interactions or main effects between gender, self-efficacy, in reference to SPA scores. Each ANOVA analyzed gender and overall PSE scale

score (high and low levels of self-efficacy, respectively). The alpha level was set at $p \leq 0.05$ to determine statistical significance. An independent *t*-test was also completed comparing SPA scores between those individuals with high or low self-efficacy.

A stepwise multiple regression analysis was also completed to determine which variables were most strongly associated with predicting SPA among participants. First, a multicollinearity analysis was conducted using (20). Statistics for multicollinearity included examining tolerance and VIF values, each of which fell within appropriate values. Level of self-efficacy and gender served as predictor variables in this regression.

RESULTS

The final sample ($n = 154$) included an analysis of both SPA-7 and PSE scales. A two-way ANOVA yielded no significant interaction between PSE and gender with regards to SPA ($F(1, 153) = 0.181, p = 0.671, \eta^2 = 0.001$). There was a significant main effect with self-efficacy ($F(1, 153) = 94.930, p < 0.001, \eta^2 = 0.388$); however gender showed no significant main effect ($F(1, 153) = 2.032, p = 0.156, \eta^2 = 0.013$). Results also indicated that Levene's test for homogeneity was violated. This was corrected for by utilizing an independent *t*-test with equal variances not assumed to examine the main effect for self-efficacy. Results indicated that individuals with low self-efficacy ($M = 68.79, SD = 8.57$) displayed higher SPA than their respective counterparts ($M = 103.25, SD = 6.98, p < 0.001, \text{Cohen's } d = 4.41$).

A stepwise multiple regression analysis was conducted to determine which variables most strongly predicted the prevalence of SPA. The first model generated accounted for 41.0% of the variance and included only PSE as a predictor of SPA ($\beta = -0.643, p < 0.001$). The second model, which included both predictor variables, accounted for 42.3% of the variance and indicated that PSE was the strongest predictor of SPA ($\beta = -0.634, p < 0.001$) while gender was weaker in comparison ($\beta = 0.132, p = 0.037$).

DISCUSSION

The primary purpose of the present study was to investigate differences and the association between SPA, gender, and self-efficacy levels among college-aged students enrolled in physical activity courses. Results of this study revealed significant differences regarding the presence of SPA and self-efficacy among college aged students. Two of the three hypotheses were supported as it was expected that those with higher self-efficacy would display lower levels of SPA and vice versa, and that both self-efficacy and gender would account for a significant proportion of SPA variance.

Statistical analysis of the data supported the first hypothesis that there would be significant differences between high and low self-efficacy groups and SPA. It was found that individuals with higher self-efficacy displayed significantly lower levels of SPA compared to those with lower levels of self-efficacy. This finding supports previous that also found a negative correlation between level of self-efficacy and amount of SPA experienced by

individuals (12). The present study also found self-efficacy to be the strongest predictor of SPA among participants. These consistencies indicate that the current generation of college students still struggle with finding a sense of efficaciousness with relation to exercise. This knowledge may be used to further investigate the specific affective responses of these individuals in efforts to enrich the understanding of the cognitive aspects of both SPA and self-efficacy.

The findings of the present study may be linked to the thematic structure of self-presentation theory. A basic premise of this theory is evidenced when individuals place emphasis on positive self-aspects while attempting to mask negative self-aspects (17). Similar results were found regarding a sense of pride in displaying one's body in social settings (4). Individuals may feel proud to display their physique socially when they perceived the comparison of their body to others was superior.

This study added support to the existing body of research with the combination of SPA and self-efficacy with self-presentation theory as a foundation, indicating that there was an inverse relationship between SPA and self-efficacy. Similar findings surfaced from previous research (9, 13) as higher levels of SPA led to decreased confidence and discomfort from displaying one's physique in exercise settings among college-aged students. While the second research hypothesis was not supported given the lack of significant differences found between men and women with regard to SPA, previous research has found that women reported their experiences regarding SPA to be closely tied to family

and social networks that were expressed openly in an emotional manner (4). Males, however, tended to attribute feelings of physique anxiety to be related to interpersonal comparisons with other males and lacked the emotional expression of women. This information is a key component to the design and implementation of practical interventions surrounding SPA and body image concerns among college students, as confidence levels may differ greatly among men and women (18). The existing body of research has continually found that women experienced higher levels of SPA than males (5, 8). Thus, gender should likely not be overlooked when analyzing the experiences of men and women with regards to their body image concerns and the prevalence of SPA.

The third hypothesis was supported, as both gender and self-efficacy accounted for a statistically significant portion of SPA variance. Considering the proportion gender accounted for was substantially smaller in the model that included both predictor variables, the first model including only self-efficacy was retained for interpretation. Thus, these results indicate that self-efficacy may be the only predictor needed in future models due to the small contribution of gender. Based on the acceptance of this model, an additional noteworthy theoretical connection is found within social cognitive theory, specifically surrounding social and situational impediments. It has been suggested that individuals avoid behaviors leading to self-dissatisfaction in which he or she does not perceive to have feelings of control (1). Those displaying lower levels of self-efficacy may feel that the control of their

body image is externalized to other sources. For example, social and cultural influence may be influential, particularly through the lens of one's culture or family structure. Certain behaviors such as being sedentary or wearing provocative clothing were avoided not only in efforts to evade personal dissatisfaction, but also to appease cultural standards and family members (1). Thus, the present study provided additional insight regarding the importance of social influences on one's physique perceptions using social cognitive theory as a guide.

A few key limitations surfaced throughout the course of this study. The first limitation is the lack of true participant randomization due to the use of convenience sampling. This limitation poses threats to external validity, as the sample used in this study may not be representative of a larger population due to its limited geographic, cultural, and age representation. The use of a randomized, cross-sectional, and more culturally diverse sample may aid future researchers in expanding the scope of SPA prevalence with regard to gender and self-efficacy. A second limitation of the present study was found in the use of self-report questionnaires for quantitative data collection. The potential for social desirability poses a threat, as participants may have made an attempt to present themselves more positively while responding to the surveys, thus not accurately reflecting the prevalence, or lack thereof, of SPA or self-efficacy. Related to this is a third limitation is the potential for self-selection bias. As participants had the choice whether or not to take the surveys, those who elected to take part in the study may not be representative of the target

population, thus further limiting the generalizability of the results. Finally, the time of data collection may have been a limitation in this study, as self-efficacy levels may change over the course of a semester due to increased task competencies (11).

The present study examined the association between social physique anxiety and self-efficacy among college-aged students participating in physical activity courses. This data may be used in efforts to create interventions aimed at decreasing the prevalence of SPA while increasing the prevalence of exercise-related self-efficacy and exercise adherence among college-aged students. The use of a mixed-methodological approach to examine these two constructs may be suggested to add to the existing body of research by enhancing the statistical evidence of the relationship between SPA and self-efficacy among college students along with providing a rich, qualitative description into individuals' perceptions of physique. Future studies should also consider implementing an intervention program including exercise and education in efforts to reduce the prevalence of SPA and increase exercise self-efficacy among participants.

REFERENCES

1. Bandura A. Health promotion by social cognitive means. *Health Educ Behav* 31: 143-164, 2004.
2. Bandura A, Adams NE, Beyer J. Cognitive processes mediating behavioral change. *J Pers Soc Psychol* 35: 125-139, 1977.
3. Carlson SA, Fulton JE, Schoenborn, CA, Loustalot F. Trend and prevalence estimates based on the 2008 physical activity guidelines for americans. *Am J Prev Med* 39: 305-313, 2010.
4. Castonguay AL, Gilchrist JD, Mack DE, Sabiston CM. Body-related pride in young adults: An exploration of the triggers, contexts, outcomes, and attributions. *Body Image* 10: 335-343, 2013.
5. Crawford S, Eklund RC. Social physique anxiety, reasons for exercise, and attitudes toward exercise settings. *J Sport Exerc Psychol* 16: 70-84, 1994.
6. Focht BC, Hausenblas HA. Perceived evaluative threat and state anxiety during exercise in women with social physique anxiety. *J Appl Sport Psychol* 16: 361-368, 2004.
7. Gray JB. Theory guiding communication campaign praxis: A qualitative elicitation study comparing exercise beliefs of overweight and healthy weight college students. *Qual Res Rep Commun* 12: 34-42, 2011.
8. Hart EA, Leary MR, Rejeski WJ. The measurement of social physique anxiety. *J Sport Exerc Psychol* 11: 94-104, 1989.
9. Hausenblas HA, Brewe BW, Van Raalte JL. Self-presentation and exercise. *J Appl Sport Psychol* 16: 3-18, 2004.
10. Hausenblas HA, Downs DS. Comparison of body image between athletes and nonathletes: A meta-analytic review. *J Appl Sport Psychol* 13: 323-339, 2001.
11. Johnson ML, Edwards OV, Dai T. Growth trajectories of task-value and self-efficacy across an academic semester. *Univers J Educ Res* 2: 10-18, 2014.
12. Katula JA, McAuley E, Mihalko SL, Bane SM. Mirror, mirror on the wall...exercise environment influences on self-efficacy. *J Soc Behav Pers* 13: 319-332, 1998.
13. Leary MR. Self-presentational processes in exercise and sport. *J Sport Exerc Psychol* 14: 339-351, 1992.
14. Motl RW, Conroy DE. The social physique anxiety scale: Cross validation, factorial invariance, and latent mean structure. *Meas Phys Educ Exerc Sci* 5: 81-95, 2001.

15. Motl RW, Conroy DE. Validity and factorial invariance of the social physique anxiety scale. *Med Sci Sports Exerc* 32: 1007-1017, 2000.
16. Ryckman RM, Robbins MA, Thornton B, Cantrell P. Development and validation of a physical self-efficacy scale. *J Pers Soc Psychol* 42: 891-900, 1982.
17. Schlenker BR, Leary MR. Social anxiety and self-presentation: A conceptualization model. *Psychol Bull*, 92: 641-669, 1982.
18. Scott LA. Effects of exercise and a brief education intervention on social physique anxiety in college students. (Unpublished master's thesis). Georgia Southern University, Statesboro, 2005.
19. Scott LA, Burke KL, Joyner AB, Brand JS. Examining the stability of the 7-item social physique anxiety scale using a test-retest method. *Meas Phys Educ Exerc Sci* 8: 57-62, 2004.
20. Thomas JR, Nelson JK, Silverman SJ. *Research methods in physical activity*. Champagne, IL: Human Kinetics, 2005.
21. USDHHS. 2008 physical activity guidelines for Americans. Washington DC: USDHHS, 2008.