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## International Journal of Motor Control and Learning (IJMCL)

Journal Homepage: <http://www.ijmcl.com>



# The Relationship between Social Physique Anxiety and Nutritional Behaviors among Students of University



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### ARTICLE INFO

#### Article history:

Received: 2021/12/16

Accepted: 2022/04/23

Available online: 2022/05/05

#### Keywords:

Social physique anxiety

Eating disorder

Diet

Overeating

### ABSTRACT

**Background:** This study aimed to investigate the relationship between social physique anxiety and nutritional behaviors among male and female students of the university.

**Methods:** The research was descriptive-correlational. The statistical population consisted of all students of the University of Tehran in 2020, from which 221 people (females: n=110) and (male: n=111) (mean age:  $21.12 \pm 2.6$  years) were randomly selected and completed the Social Physique Anxiety and Eating Disorders questionnaires. The Social Physique Anxiety Scale was used to collect data and the Garner and Garfinkel 26-item Eating Disorder Questionnaire was used to assess nutritional behaviors. The Pearson correlation test was used to examine the relationship between research variables. Due to the normality of the data based on the K-S test, an independent T-test.

**Results:** The results showed that girls with upper extremity social physique anxiety have an eating disorder ( $r = 0.20, P \geq 0.05$ ). On the other hand, boys with upper extremity social physique anxiety showed overeating eating behavior ( $r = 0.15, P \geq 0.05$ ). No significant difference was observed in other components.

**Conclusion:** According to the results of the study, girls who have high social physique anxiety are more likely to develop dietary behaviors. However, overeating eating behavior is seen in those boys who have high social physique anxiety.

## 1. Introduction

Researchers believe that if the community encourages individuals to participate in regular exercise and physical activity, it will help to increase self-esteem and physical and mental health (Motl et al., 2005). Many of the reasons people give for participating in sports are to get fit and maintain a good posture, as opposed to motivations such as good health or pleasure (Smith, Handley, & Eldredge, 1998). According to self-presentation theory, people's perception of their physical appearance can both encourage and deter strong motivation for exercise behavior to achieve the desired body shape (Brewer, Diehl, Cornelius, Joshua, & Van Raalte, 2004; Lanfranchi, Maiano, Morin, & Therme, 2015). Many people worry about how others will assess their physical appearance during exercise. And this concern affects the type of activities one engages in and when, where, and with whom one exercise (Ivarsson, Svalander, Litlere, & Nevenon, 2006). People who are very concerned about how others perceive their body shape may avoid participating in group activities for fear of leaving a negative social image in others and for anxiety caused by shame. Body shape has always been important in social interactions. Social psychologists have found that people associate physical attractiveness with desirable personality traits such as intelligence, competence, and social acceptance. Sometimes people try to avoid negative influence by adopting a conservative approach instead of

influencing others, and this is called (a self-protection) effort (Brown & Ogden, 2004). One of the underlying factors of protective self-presentation behavior is social physique anxiety (SPA) (Rheingold, Herbert, & Franklin, 2003). One type of social anxiety is social physique anxiety in which the appearance of the body as an unavoidable element in most face-to-face social interactions is an important area of self-presentation. In any face-to-face social encounter, there is a possibility of mutual evaluation of body shape and structure by the parties. The discomfort experienced in such situations is called SPA (Hart et al., 1989). This concept is a relatively new field in sports science research and sports psychology and has attracted much interest and attention. For example, the relationship between SPA and internal motivations and behavior, slimming motivation, perfectionism, Bulimia, and dissatisfaction with body shape has been repeatedly studied (Miller & Fry, 2018). The SPA causes problems in individual and social life. Research shows that people choose problems such as isolation and abstinence from physical activity, which harm both their health and their general health. A person can become self-centered after the onset of social anxiety. That is, to take wrong actions to correct his/her body. One of the influential points of this behavior is the type of eating behaviors that may lead to eating disorders (ED). Body image disorders cause the development and manifestation of eating disorders, and high correlations have been reported between these psychological constructs (Leon, Fulkerson, Perry, & Cudeck, 1993; Thompson & Chad, 2002). On the other hand, disturbed body image and body image disorder cause the return of ED symptoms in people who do not have

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the desired body image (Motl et al., 2005). ED include uncontrolled thoughts and behaviors that induce morbid eating patterns. Men and women with the disorder have unrealistic and distorted perceptions of the body. Example These people always think they are overweight (Wong et al., 2005). ED are divided into three categories: anorexia nervosa (AN), Bulimia nervosa (BN), and Eating Disorder Not Otherwise Specified (EDNOS), and each category has its symptoms. AN is the third leading cause of illness in the young population after obesity (Lahortiga-Ramos et al., 2005). In a study conducted in Iran, high school girls in the second year of Tehran reported 0.9% of bulimia nervosa, 3.23% of anorexia nervosa and 6.63% of mild ED (Nobakht & Dezhkam, 2000). Finally, overeating is another type of eating disorder in which a person eats excessively and uncontrollably without trying to lose weight and worrying about their weight (McCraedy & Ziedonis, 2001).

Statistics show that women are more likely to develop the disorder than men and that for every man, 10 women suffer from ED (Robinson, Psych, & Dolhanty). ED Today is a very important risk to the physical and mental health of girls and boys who have entered puberty and accounts for approximately 8% of all clinical ED or disorders (Collins, 2005). People with ED cannot control their eating. Adolescents with ED do not control their food intake, they eat a lot and feel guilty or angry about it. That is, while eating a lot, he/she is embarrassed and then takes compensatory ways to lose weight. These actions are also somewhat out of their control and are done automatically and nervously. This is a good measure of whether a person has bulimia nervosa or a normal state in adolescence (Gibson, Workman, & Mehler, 2019).

However, the physiological changes and stress associated with eating with intense exercise are exacerbated and may put female athletes on the borderline between health and disease. In addition, the pressure exerted on weight loss by coaches, relatives, and friends makes female athletes more vulnerable to ED. Numerous studies have shown that ED are more common in women and girls than in other groups (Knapp, Aerni, & Anderson, 2014). In addition to the stress or strain on people with ED, another variable that plays a key role in causing "anorexia and bulimia nervosa" is "body image perception". The pressure to lose weight, which has a profound effect on the individual, can be well seen in the media and publications. According to social comparison theory, women often compare themselves to skinny models and personalities in the media, and when they see a mismatch between what their ideal body is and what they perceive as their body, they may start dieting or have an eating disorder (Bekker & Boselie, 2002). What is needed here is to take into account the factors that control thinking and change the state of mind. In this research, we try to identify thought control strategies. Thought control strategies are the answers that people show to control cognitive activities.

Dissatisfaction with body image is one of the essential preconditions for ED. People with negative body image are more likely to develop ED and suffer more from emotions such as depression, loneliness (isolation), low self-esteem, and obsession with weight loss (International Association of Eating Disorders, 2006)(Bishop Jr, 2007). Many theorists attribute the increase in ED in recent years to the emphasis on weight loss and its appreciation in Western societies. Prospective studies in adolescents have shown that weight concerns, body image disorders, and depression are each associated with an increased risk of ED (Ivarsson et al., 2006). University age is a stage in which one tries to manage the perception of others about oneself. Concerns about this management sometimes increase social anxiety and the person makes self-prescriptions without counseling to reduce it. Changing nutritional behaviors due to the impact on physical and mental health is one of the issues that should be given special attention. Therefore, in the present study, the relationship between the level of anxiety perceived by students and their nutritional tendencies was investigated.

## 2. Materials and Methods

### 2.1. Subjects

The method of the present study was descriptive-correlational. The statistical population of the study was all students of the University of Tehran who were selected using a simple random sampling method. Among these people, 221 females (n=110) and male (n=111) with mean age of (21.12 ± 2.6) years, announced their readiness to the research. Questionnaires designed in this regard were provided to them and the required information was collected from them. It is worth mentioning that the research subjects were justified in the field of how to conduct the study and the confidentiality of information, as well as the purpose of this study, and all of them entered the study voluntarily.

### 2.2. Apparatus and task

#### Eating Attitudes Questionnaire (EAT-26)

This section used a 26-item standard questionnaire to assess eating attitudes, eating habits, and behaviors. For example, "I'm afraid of being obese or overweight," or "I avoid eating even when I'm hungry." Answer it in Likert: Never and rarely (zero point), often (score one), usually (score two) and always (score three). The maximum score of this questionnaire is 78 and the score 20 or more is defined as a disturbed nutritional attitude (abnormal attitude) towards eating; In the study, the correlation coefficient of EAT-26 in the eating disorder test was equal to 0.81 and its Cronbach's alpha coefficient was also reported to be 0.94. EAT-26 can distinguish between the group with ED.

#### Social-Physique Anxiety Questionnaire (SPAS)

The Motel & Conway Social-physique Anxiety Scale consists of seven Likert questions based on the Hart et al. (1989) 12-item First Scale(Hart et al., 1989). This scale measures the level of anxiety experienced by an individual about the shape of his/her body in a social situation, and the individual's mental image of weight and shape is not measured directly in this questionnaire. Subjects determine their response to each item on a Likert scale from = 1 (never) to = 5 (strongly), according to their situation. The subject score ranges from 7 to 35 of this test was based on the retest method is 0.94 (Scot, 2004).

### 2.3. Procedure

At first of survey, the researcher explained the general nature of the study in that it would survey participants' feelings about their sense of motives and their bodies, but all survey responses would remain anonymous. An information letter was prepared, which described the nature of the study and its aims, in addition to the research instruments that would be used and the way in which the data would be handled and used (only for scientific purposes). As the first step, all incomplete questionnaires were discarded, along with those that presented confusing or unreliable responses. This process of review and transcription was performed throughout by the principal investigator with the aim of ensuring correct data handling, whilst at the same time avoiding mistakes due to data omission or incorrect assignment.

### 2.4. Data analysis

Statistical analysis of the obtained information was performed at two levels of descriptive and inferential statistics. The collected data were described using the mean and standard deviation. Also, Pearson correlation coefficient and independent T-test were used at the  $p \leq 0.05$  using with SPSS software version 18.

## 3. Results

Descriptive statistic showed that the overeating and mental occupation with food (OMOWF) in the men and the component of the diet in the women group had the highest mean scores. The oral control has lower mean scores in both men and women (Table 1).

**Table 1.** Mean scores and standard deviation of the studied variables by men and women.

Indicator (N=212)	Mean±Sd	Mean±Sd
Diet	27.8± 5.5	22.13± 8.6
OMOWF	11.12± 1.2	44.11± 2.3
Oral control	42.4± 4.3	71.4± 1.3
SPA	1.19± 2.3	2.21± 6.4

**Table 2.** Pearson correlation coefficient between the studied variables in men and women.

Factor	Pearson correlation coefficient		
	Diet	OMOWF	Oral control
SPA	Men	-02.0	15.0*
	Women	20.0*	07.0

\* P ≤ 0.05.

**Table 1.** Results of independent t-test to compare women and men in the studied variables.

Factor	Group	N	Mean± Sd	t	Df	Sig
Die	Women	110	22.13± 8.6	42.5	217	0.01*
	Men	111	27.8± 5.5			
OMOWF	Women	110	44.11± 2.3	-91.1	217	0.07
	Men	111	11.12± 1.2			
Oral control	Women	110	71.4± 1.3	69.0	217	0.32
	Men	111	42.4± 4.3			
SPA	Women	110	2.21± 6.4	96.3	217	0.01*
	Men	111	1.19± 2.3			

\* P ≤ 0.05.

The results of Table 2 show that in the men group, there is a positive and significant relationship between social anxiety, overeating and mental occupation with food ( $P \leq 0.05$ ). There was also a positive and significant relationship between social physique anxiety and diet in the women ( $P \leq 0.05$ ). There is no significant relationship between other variables.

An independent t-test was used to examine gender differences in eating attitudes and their components. The results according to Table 3 showed that there was a significant difference between men and women only in the diet dimension and women scored higher in this dimension ( $P \leq 0.05$ ). But no significant difference was observed between overeating subscales with mental occupation with food and oral control in men and women ( $P \leq 0.05$ ).

Also, the results obtained from the component of SPA show that the mean scores of men are lower than the mean scores of women and the difference between them is significant at the level ( $P = 0.03$ ).

#### 4. Discussion and Conclusion

Studies that have examined self-concept in ordinary people suggest that self-concept plays an essential role in mental health. Self-concept is how we perceive our behaviors, abilities, and unique characteristics. As the role of self-image decreases, symptoms of anxiety, depression, loneliness, shyness, etc. will appear and if they continue, they will cause serious problems (Lantz et al., 1997; Young, Clopton, & Bleckley, 2004). Due to the cultural changes that have taken place in society, it can be expected that people will arbitrarily tend to certain body types. In today's society, girls with ectomorphic or lean body types are generally popular, and boys with mesomorphic or muscular body types, so-called athletes are popular, and other body types are not popular (Brown & Ogden, 2004; Lantz et al., 1997). Most people are concerned about how others perceive their bodies. Physical anxiety occurs when a person tries to manage the attitude of people with negative mental images about their physical appearance, they try to manage the attitude of people around them. These managerial behaviors can be portrayed as real behavior or as a concern that does not have a positive effect on others due to their physical appearance. Staying away from the environments in which one learns to be judged by others is one of the strategies one uses to manage perception. Most people worry about how others perceive their bodies. Physical anxiety occurs when a person knows that in managing the attitude of people with negative mental images about their physical appearance, they try to manage the attitude of people around them. These managerial behaviors can be portrayed as real behavior or as a concern that does not have a positive effect on others due to their physical appearance.

Avoiding the environments in which one learns to be judged by others is one of the strategies one takes to manage this perception.

However, some self-prescribing strategies can be harmful, and drastically changing eating habits is one of them. These eating habits can eventually become a habit and manifest themselves as an eating disorder. (Russell, 2002) believes that people with social anxiety continue their obsessive behaviors because they do not receive feedback from others. In a 2009 study, Hagger and Stevens found that girls between the ages of 11 and 12 had higher levels of social anxiety. Therefore, this group can take prescriptions without consulting a doctor or psychologist, which of course can be due to a lack of self-esteem (Hagger & Stevenson, 2010). After a while, the person receives managerial behaviors as part of his personality, which can lead to mental problems such as ED. Blackmer et al. (2011) in a study entitled Analysis of the relationship between eating attitudes and body image in female students showed that there is a significant positive correlation between nutritional attitudes and self-dissatisfaction (Blackmer, Searight, & Ratwik, 2011). Dissatisfaction with body weight has been predicted to be a significant predictor of the onset of ED (Brown & Ogden, 2004; Forman-Hoffman & Cunningham, 2008; Riebl, Subudhi, Broker, Schenck, & Berning, 2007). Some researchers have reported that in non-athlete adolescents, the sum and sub-scores of EAT-26 are positively correlated with body mass index and fat mass (Le Grange, Louw, Russell, Nel, & Silkstone, 2006).

Since the results of this study showed that there is a significant positive relationship between SPA and the symptoms of an eating disorder. These results are consistent with the study by (Lanfranchi et al., 2015). Lanfranchi et al. (2015) measured the association between SPA and eating behavioral symptoms among French adolescents and found that those with higher anxiety had higher symptoms of ED. Patients' self-perceptions are also influenced by several factors, such as the attitudes of others, social interactions, the individual's relationship with the environment and environmental contexts are among the factors that affect self-perception (Baumeister, 1999). Success and failure in life and the reflection of others and one's attitudes toward them (Shaw & Gant, 2004) and socio-economic conditions (Myers & Smith, 2012) are among the factors that influence the formation and evolution of self-perception. Attitudes and behaviors toward eating are determined by multiple factors such as psychological factors such as self-perception, stress and anxiety, and this variable is very effective in the formation and development of ED. The pressure of being thin, which has a profound effect on the individual, can be well seen in the media and publications. According to social comparison theory, women often compare themselves with skinny models and personalities in the media and magazines, and when there is a mismatch between the ideal body and what they think they are, they begin to go on an extreme diet (Bekker & Boselie, 2002), whose research results were consistent with the results obtained in our research.

### Acknowledgment

The authors thank the students of the Faculty of Physical Education and Sports Sciences of the University of Tehran who participated in this research.

### Conflict of interest

The authors declare there is no conflict of interest.

### References

- Baumeister, R. F. (1999). *The self in social psychology*: Psychology Press.
- Bekker, M. H., & Boselie, K. A. (2002). Gender and stress: is gender role stress? A re-examination of the relationship between feminine gender role stress and eating disorders. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 18(3), 141-149.
- Bishop Jr, E. R. (2007). *Eating and Weight Disorders*: Carlos M. Grilo, New York: Psychology Press, 2006, 246 pages. In: Taylor & Francis.
- Blackmer, V., Searight, H. R., & Ratwik, S. H. (2011). The Relationship between Eating Attitudes, Body Image and Perceived Family-of-Origin Climate among College Athletes. *North American Journal of Psychology*, 13(3).
- Brewer, B., Diehl, N., Cornelius, A., Joshua, M., & Van Raalte, J. (2004). Exercising caution: Social physique anxiety and protective self-presentational behaviour. *Journal of Science and Medicine in Sport*, 7(1), 47-55.
- Brown, R., & Ogden, J. (2004). Children's eating attitudes and behaviour: a study of the modelling and control theories of parental influence. *Health education research*, 19(3), 261-271.
- Collins, A. (2005). Statistics on eating disorders. Retrieved October, 26, 2005.
- Forman-Hoffman, V. L., & Cunningham, C. L. (2008). Geographical clustering of eating disordered behaviors in US high school students. *International Journal of Eating Disorders*, 41(3), 209-214.
- Gibson, D., Workman, C., & Mehler, P. S. (2019). Medical complications of anorexia nervosa and bulimia nervosa. *Psychiatric Clinics*, 42(2), 263-274.
- Hagger, M. S., & Stevenson, A. (2010). Social physique anxiety and physical self-esteem: Gender and age effects. *Psychology and Health*, 25(1), 89-110.
- Hart, E. A., Leary, M. R., & Rejeski, W. J. (1989). Tie measurement of social physique anxiety. *Journal of Sport and Exercise Psychology*, 11(1), 94-104.
- Ivarsson, T., Svalander, P., Litlere, O., & Nevenon, L. (2006). Weight concerns, body image, depression and anxiety in Swedish adolescents. *Eating behaviors*, 7(2), 161-175.
- Knapp, J., Aerni, G., & Anderson, J. (2014). Eating disorders in female athletes: use of screening tools. *Current sports medicine reports*, 13(4), 214-218.
- Lahortiga-Ramos, F., De Irala-Estévez, J., Cano-Prous, A., Gual-García, P., Martínez-González, M. Á., & Cervera-Enguix, S. (2005). Incidence of eating disorders in Navarra (Spain). *European Psychiatry*, 20(2), 179-185.
- Lanfranchi, M.-C., Mañano, C., Morin, A. J., & Therme, P. (2015). Social physique anxiety and disturbed eating attitudes and behaviors in adolescents: Moderating effects of sport, sport-related characteristics, and gender. *International journal of behavioral medicine*, 22(1), 149-160.
- Lantz, C. D., Hardy, C. J., & Ainsworth, B. E. (1997). Social physique anxiety and perceived exercise behavior. *Journal of Sport Behavior*, 20(1), 83.
- le Grange, D., Louw, J., Russell, B., Nel, T., & Silkstone, C. (2006). Eating attitudes and behaviours in South African adolescents and young adults. *Transcultural psychiatry*, 43(3), 401-417.
- Leary, M. R. (1992). Self-presentational processes in exercise and sport. *Journal of Sport and Exercise Psychology*, 14(4), 339-351.
- Leon, G. R., Fulkerson, J. A., Perry, C. L., & Cudeck, R. (1993). Personality and behavioral vulnerabilities associated with risk status for eating disorders in adolescent girls. *Journal of abnormal psychology*, 102(3), 438.
- McCrary, B. S., & Ziedonis, D. (2001). American Psychiatric Association practice guideline for substance use disorders. *Behavior Therapy*, 32(2), 309-336.
- Miller, S., & Fry, M. (2018). Relationship between motivational climate to body esteem and social physique anxiety within college physical activity classes. *Journal of Clinical Sport Psychology*, 12(4), 525-543.
- Motl, R. W., Konopack, J. F., McAuley, E., Elavsky, S., Jerome, G. J., & Marquez, D. X. (2005). Depressive symptoms among older adults: long-term reduction after a physical activity intervention. *Journal of behavioral medicine*, 28(4), 385-394.
- Myers, D. G., & Smith, S. M. (2012). *Exploring social psychology*: McGraw-Hill New York.
- Nobakht, M., & Dezhkam, M. (2000). An epidemiological study of eating disorders in Iran. *International Journal of Eating Disorders*, 28(3), 265-271.
- Rheingold, A. A., Herbert, J. D., & Franklin, M. E. (2003). Cognitive bias in adolescents with social anxiety disorder. *Cognitive therapy and Research*, 27(6), 639-655.
- Riebl, S. K., Subudhi, A. W., Broker, J. P., Schenck, K., & Berning, J. R. (2007). The prevalence of subclinical eating disorders among male cyclists. *Journal of the American Dietetic Association*, 107(7), 1214-1217.
- Robinson, A. L., Psych, C., & Dolhanty, J. National Eating Disorder Information Centre.
- Russell, W. D. (2002). Comparison of self-esteem, body satisfaction, and social physique anxiety across males of different exercise frequency and racial background. *Journal of Sport Behavior*, 25(1).
- Shaw, L. H., & Gant, L. M. (2004). In defense of the Internet: The relationship between Internet communication and depression, loneliness, self-esteem, and perceived social support. *Revista de Psicología del Trabajo y de las Organizaciones*, 37(2).
- Smith, B. L., Handley, P., & Eldredge, D. A. (1998). Sex differences in exercise motivation and body-image satisfaction among college students. *Perceptual and motor skills*, 86(2), 723-732.
- Thompson, A. M., & Chad, K. E. (2002). The relationship of social physique anxiety to risk for developing an eating disorder in young females. *Journal of Adolescent Health*, 31(2), 183-189.
- Wong, J. P., Ho, S., Lai, M. K., Leung, G., Stewart, S., & Lam, T. (2005). Overweight, obesity, weight-related concerns and behaviours in Hong Kong Chinese children and adolescents. *Acta Paediatrica*, 94(5), 595-601.
- Young, E. A., Clopton, J. R., & Bleckley, M. K. (2004). Perfectionism, low self-esteem, and family factors as predictors of bulimic behavior. *Eating behaviors*, 5(4), 273-283.