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Does Self Esteem Moderate the Relation between Gender and Weight Preoccupation in Undergraduates?

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Abstract

Previous research has established gender differences in self esteem as well as weight preoccupation. In addition self esteem is known to relate to weight preoccupation. However, no studies have examined whether self esteem moderates the relation between gender and weight preoccupation. Five hundred sixty seven undergraduates completed surveys assessing self esteem and weight preoccupation. Results showed significant gender differences in self esteem and weight preoccupation. In addition, the interaction between self esteem and gender had a small but significant effect on weight preoccupation. Counselors should be aware of this when designing programs to treat weight preoccupation in conjunction with low self esteem, especially for women.

Keywords: Gender, self esteem, weight preoccupation, college students

Introduction

Recent research suggests that women display more weight preoccupation than do men. For example, female college students are more likely than are male college students to display dietary control and bulimic behavior and have higher total scores on the Eating Attitudes Test (EAT; Macedo et al., 2007; see also Erol, Toprak, & Yazici, 2006; Milligan & Pritchard, 2006), as well as higher scores on bulimia, body dissatisfaction, and drive for thinness on the Eating Disorders Inventory (EDI; Johnson, Crosby et al., 2004; Pritchard, 2008a; Shea & Pritchard, 2007). In fact, female undergraduates express higher levels of body dissatisfaction, body image dysphoria, and are more invested in their appearance than are male undergraduates (Anderson & Bulik, 2004; Muth & Cash, 1997). Similarly, female undergraduates are more likely to utilize a variety of weight-loss strategies than are male undergraduates, and females also report lower levels of satisfaction with several specific body parts (Kashubeck-West, Mintz, & Weigold, 2005; see also Mintz & Kashubeck, 1999).

Although research certainly supports the idea that women exhibit more weight preoccupation than men, recent research has begun to suggest that it may depend on the specific attitude or behavior in question. For example, some research suggests that there are no gender differences in body dissatisfaction (Smolak & Levine, 1994) or body attitudes (Wilcox, 1997). However, there are gender differences in weight gain and weight loss attempts; correct weight males tend to think they are underweight and may try to gain weight, whereas correct weight females are more likely to believe they are overweight and may attempt to lose weight (Raudenbush & Zellner, 1997). As a result, females exhibit higher levels of most weight preoccupation behaviors centered on losing weight, whereas males exhibit higher levels of excessive exercise in an attempt to 'bulk up' (Anderson & Bulik, 2004; Grossbard, Lee, Neighbors, & Larimer, 2009; Kiefer, Rathmanner, & Kunze, 2005; Tata, Fox, & Cooper, 2001) due to their greater drive for muscularity (Grossbard et al., 2009).

Thus, it appears that although women may engage in certain types of weight preoccupation behaviors more so than men, there may be no gender differences in others or men may actually engage in certain types of weight preoccupation behaviors more than women do. It is also possible that other factors may interact with gender in its relation to weight preoccupation. The present study investigates one such possible factor, self esteem. The literature on the relation between self esteem and weight preoccupation as well as the relationship between gender and self esteem will be discussed below.

Self Esteem and Weight Preoccupation

Low self-esteem has been found to relate to several types of weight preoccupation behaviors including drive for thinness (Milligan & Pritchard, 2006; Shea & Pritchard, 2007), poor body image and body dissatisfaction (Abell & Richards, 1996; Gleason, Alexander, & Somers, 2000; Lowery et al., 2005; Milligan & Pritchard, 2006; Shea & Pritchard, 2007), bulimic symptoms (Gilbert & Meyer, 2005; Mora-Giral, Raich-Escursell, Segues, Torras-Claraso,

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& Huon, 2004; Milligan & Pritchard, 2006; Shea & Pritchard, 2007; Steele, Corsini, & Wade, 2007; Vohs, Bardone, Joiner, Abramson, & Heatherton, 1999), and weight and shape concern in college students (Delinsky & Wilson, 2008; see also Grossbard et al., 2009; Laliberte, Newton, McCabe, & Mills, 2007).

Self Esteem and Gender

Some research indicates that although self esteem declines during adolescence in both males and females, females experience a decline more rapidly than do males (Heaven & Ciarrochi, 2008), with the greatest gender difference reported in late adolescence (Kling, Hyde, Showers, & Buswell, 1999) and the gap becoming smaller, but still significant, over time. However, other studies have found no gender differences at all in self esteem (see Dixon & Kurpius, 2008; Richardson & Benbow, 1990).

The Present Study

Research has established a relation between gender and certain types of weight preoccupation behaviors (e.g., Erol et al., 2006; Johnson et al., 2004; Macedo et al., 2007; Milligan & Pritchard, 2006; Pritchard, 2008a; Shea & Pritchard, 2007). However, there is also an established relation between self esteem and weight preoccupation (e.g., Abell & Richards, 1996; Gleason et al., 2000; Lowery et al., 2005; Milligan & Pritchard, 2006; Shea & Pritchard, 2007). It is possible that the gender differences in weight preoccupation are not due to gender per se but to differences in self esteem. Furthermore, as females experience a greater decline in self esteem throughout adolescence than do males (Heaven & Ciarrochi, 2008), and this decline peaks during the early college years of late adolescence (Kling et al., 1999), perhaps the effect of self esteem on weight preoccupation is stronger for females than males during this critical time (c.f. Kashubeck-West et al., 2005). However, few studies have examined the relation between gender, self esteem, and weight preoccupation. In particular, no studies have examined whether self esteem might moderate the relation between gender and weight preoccupation.

The purpose of the present study was to examine whether self esteem moderates the relation between gender and weight preoccupation behaviors as measured by three of the most common types of these behaviors on the Eating Disorders Inventory-3 (drive for thinness, bulimia, body dissatisfaction; Garner, 2004) in male and female college students. It was predicted that self esteem would in fact moderate this relation, such that the effect of self esteem on weight preoccupation would be stronger in women than in men.

Method

Participants

Five hundred sixty seven undergraduates (335 women, 232 men) at a large state university in the Rocky Mountain region of the United States participated in this study. They were all students of Psychology 101 and received course credit for their participation in this study. Participants were given the link to an on-line survey, which took approximately half an hour to complete. The participants were 83.4% Caucasian, 2.6% African American, 5.1% Hispanic American, 3.8% Asian American, and 5.1% Other. The ages ranged from 18 to 55 (M = 21.43, SD = 4.95). The Institutional Review Board approved the study prior to data collection.

Measures

Weight preoccupation

The measure of weight preoccupation was constructed by summing the three most commonly used subscales (Drive for Thinness, Bulimia, and Body Dissatisfaction) of the Eating Disorder Inventory-3 (Garner, Olmsted, & Polivy, 1983; Garner, 2004; see Pike & Rodin, 1991 and Gross & Nelson, 2000 for justification for this measure), which asked about students' eating habits (e.g., I eat when I am upset) as well as how they feel about their bodies (e.g., I think that my stomach is too big). Responses were rated on a 6-point scale (*0=never, 5=always)*, with higher scores indicating more weight preoccupation (α = .94).

Self-esteem.

Levels of self-esteem were measured using the Rosenberg Self-Esteem Scale, which has been shown to be both valid and reliable (Rosenberg, 1989). This scale uses a variety of questions assessing personal feelings about oneself as well as positive and negative emotions (e.g., I feel I have a number of good qualities). Responses were measured on a 4-point scale (*0 = strongly agree, 3=strongly disagree*) and demonstrated good reliability in this study (α = .86).

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Results

Preliminary analysis

Before testing possible moderation, it was important to confirm that there were relationships among gender, self esteem, and weight preoccupation. Means and standard deviations of weight preoccupation as well as self esteem for each gender can be found in Table 1. Whereas there were no gender differences in self esteem, women exhibited higher levels of weight preoccupation than did men. In addition, self esteem correlated with weight preoccupation, $r = -.44$, $p < .001$.

Does Self Esteem Moderate the Relation Between Gender and Weight Preoccupation?

Hierarchical regression analyses were conducted to predict weight preoccupation. Self esteem was centered to minimize the possibility of multicollinearity. The predictor variables were entered in two blocks in a hierarchical regression model: (a) gender and self esteem, and (b) the interaction between gender and self esteem (see Table 2).

Gender and self esteem were first entered in the regression analysis to account for the variability in weight preoccupation. Both were strongly predictive of and accounted for 31% of the variance in weight preoccupation. In the second step of the analysis the moderating effect of self esteem on the relationship between gender and weight preoccupation was tested. The interaction contributed a small but significant amount to the explanation of weight preoccupation in addition to the main effects of gender and self esteem. Figure 1 displays the influence of level of self esteem (low, medium, or high) on mean weight preoccupation by gender. As predicted, there seems to be a stronger effect of self esteem on weight preoccupation for women than for men.

Discussion

This research represents the first attempt to study the joint effects of gender and self esteem on weight preoccupation (as measured by the summation of three subscales of the EDI-3 -drive for thinness, bulimic symptoms, body dissatisfaction). Previous studies indicated a relationship between weight preoccupation and self esteem (e.g., Abell & Richards, 1996; Gleason et al., 2000; Lowery et al., 2005; Milligan & Pritchard, 2006; Shea & Pritchard, 2007), as well as between weight preoccupation and gender (e.g., Erol et al., 2006; Johnson et al., 2004; Macedo et al., 2007; Milligan & Pritchard, 2006; Pritchard, 2008a; Shea & Pritchard, 2007). These findings were replicated in the present study. In addition, similar to previous research (Dixon & Kurpius, 2008; Richardson & Benbow, 1990), no gender differences in measures of self esteem were found in the present study. The contribution of the present study lies in the connection of all three variables together in a moderation model. The present study found that while both gender and self-esteem certainly do relate to weight preoccupation, their interaction adds a small but significant predictive value as well. As predicted, self esteem appears to exert a stronger relationship on weight preoccupation in women than in men, especially in individuals with a moderate level of self esteem.

Limitations

Despite the significant findings of the present study, several limitations may have influenced the results. First, the nature of the sample was restricted by the use of college students and the majority of the sample was Caucasian. The cross sectional nature of the sample also limits the ability to generalize such findings. Secondly, using self-report measures may cause problems with social desirability bias, fatigue, and recall bias. In addition, not using a clinical sample with diagnosed eating disorders may skew the relation because it only shows a relation between those in the midrange of the distribution for the various measures of weight preoccupation. Despite this bias against the findings, this study suggests a possible moderating relation of self esteem in the relation between gender and weight preoccupation. Further research should continue to explore this relation in a longitudinal sample with a more diverse population. Finally, the moderation models accounted for roughly one-quarter of the variance in weight preoccupation; clearly other variables contribute to weight preoccupation. Future research should include other variables when examining factors affecting weight preoccupation attitudes and behaviors (see Pritchard, 2008b).

Conclusion

The present study suggested that the relation between gender and weight preoccupation may be moderated by self esteem. Future research should also consider that simple models relating an individual personality trait to a single indicator of weight preoccupation may obscure the complex relationships among traits, thoughts and behaviors that affect individuals with weight preoccupation. In particular, as self esteem appeared to have a slightly greater effect on women's weight preoccupation than on men's, it would be desirable to find if other factors may influence men more than women. It would also be desirable to employ longitudinal surveys to determine the cause and effect

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relationships among these variables. We assumed that self esteem is a relatively stable characteristic that affects weight preoccupation. However, it is possible that there may be some causation in the opposite direction such that individuals with weight preoccupation may have lower self esteem, especially women. The nature of the present study does not allow for testing the direction of causality.

Because self esteem is related to weight preoccupation, it is important that self esteem be addressed when designing treatment programs for those suffering from any type of weight preoccupation. Counselors need to be aware of the connection between self esteem and weight preoccupation, especially in females in late adolescence. By improving self esteem through therapy or group work, weight preoccupation may also be reduced.

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References

Abell, S. C., & Richards, M. H. (1996). The relationship between body shape satisfaction and self-esteem: An investigation of gender and class differences. *Journal of Youth and Adolescence, 25,* 691-703.

Anderson, C. B., & Bulik, C. M. (2004) Gender differences in compensatory behaviors, weight and shape salience, and drive for thinness. *Eating Behaviors, 5,* 1-11.

Delinsky, S. S., & Wilson, G. T. (2008). Weight gain, dietary restraint, and disordered eating in the freshman year of college. *Eating Behaviors, 9,* 82–90.

Dixon, S. K., & Kurpius, S. E. R. (2008). Depression and college stress among university undergraduates: Do mattering and self-esteem make a difference? *Journal of College Student Development, 49,* 412-424.

Erol, A., Toprak, G., & Yazici, F. (2006). Psychological and physical correlates of disordered eating in male and female Turkish college students. *Psychiatry & Clinical Neurosciences, 60,* 551-558.

Garner, D. M. (2004). *Eating Disorder Inventory -Third Edition (EDI-3).* Lutz, FL: Psychological Assessment Resources.

Garner, D. M., Olmsted, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2,* 15-34.

Gilbert, N., & Meyer, C. (2005). Fear of negative evaluation and the development of eating psychopathology: A longitudinal study among nonclinical women. *International Journal of Eating Disorders, 37,* 307-312.

Gleason, J. H., Alexander, A. M., & Somers, C. L. (2000). Later adolescents' reactions to three types of childhood teasing: Relations with self-esteem and body image. *Social Behavior and Personality, 28,* 472-480.

Gross, R. M., & Nelson, E. S. (2000). Perceptions of parental messages regarding eating and weight and their impact on disordered eating. *Journal of College Student Psychotherapy, 15(2),* 57-78.

Grossbard, J. R., Lee, C. M., Neighbors, C., & Larimer, M. E. (2009). Body image concerns and contingent self-esteem in male and female college students. *Sex Roles, 60,* 198-207.

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Heaven, P. C., & Ciarrochi, J. V. (2008). Parental styles, conscientiousness, and academic performance in high school: a three-wave longitudinal study. *Personality and Social Psychology Bulletin, 34,* 451-461.

Johnson, C., Crosby, R., Engel, S., Mitchell, J., Powers, P.S., Wittrock, D. & Wonderlich, S. (2004). Gender, ethnicity, self-esteem and disordered eating among college athletes. *Eating Behaviors, 5,* 147-156.

Kashubeck-West, S., Mintz, L. B., & Weigold, I. (2005). Separating the effects of gender and weight-loss desire on body satisfaction and disordered eating behavior. *Sex Roles, 53,* 505518.

Kiefer, I., Rathmanner, T., & Kunze, M. (2005). Eating and dieting differences in men and women. *The Journal of Men's Health and Gender, 2,* 194-201.

Kling, K. C., Hyde, J. S., Showers, C. J., & Buswell, B. N. (1999). Gender differences in self esteem: A meta-analysis. *Psychological Bulletin, 125,* 470–500.

Laliberte, M., Newton, M., McCabe, R., & Mills, J. S. (2007). Controlling your weight versus controlling your lifestyle: how beliefs about weight control affect risk for disordered eating, body dissatisfaction, and self-esteem. *Cognitive Therapy and Research, 31,* 853-869.

Lowery, S. E., Kurpius, S. E. R., Befort, C., Blanks, E. H., Sollenberger, S., Nicpon, M. F., & Huser, L. (2005). Body image, self-esteem, and health-related behaviors among male and female first year college students. *Journal of College Student Development, 46,* 612-623.

Macedo, A., Soares, M. J., Azevedo, M. H., Gomes, A. Pereira, A. T., Maia, B., & Pato, M. (2007). Perfectionism and eating attitudes in Portuguese university students. *European Eating Disorders Review, 15,* 296-305.

Milligan, B., & Pritchard, M. E. (2006). The relationship between gender, sport, self-esteem and eating disordered behaviors in Division I athletes. *Athletic Insight, 8,* 9-43.

Mintz, L. B., & Kashubeck, S. (1999). Body image and disordered eating among Asian American and Caucasian college students: An examination of race and gender differences. *Psychology of*

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Women Quarterly, 23, 781-796.

Mora-Giral, M., Raich-Escursell, R. M., Segues, V. C., Torras-Claraso, J. & Huon, G. (2004). Bulimia symptoms and risk factors in university students. *Eating and Weight Disorders, 9,* 163-169.

Muth, J. L., & Cash, T. F. (1997). Body–image attitudes: What difference does gender make? *Journal of Applied Social Psychology, 27,* 1438-1452.

Pritchard, M. E. (2008a). Disordered eating in undergraduates: Does gender role orientation influence men and women the same way? *Sex Roles, 59,* 282-289.

Pritchard, M. E. (2008b). Diet is a 4-letter word: What can be done about America's unhealthy obsession with weight? In A. B. Turley & G. C. Hofmann, *Life Style and Health Research Progress* (pp. 183-207). Hauppauge, NY: Nova Science Publishers.

Raudenbush, B., & Zellner, D. A. (1997). Nobody's satisfied: Effects of abnormal eating behaviors and actual and perceived weight status on body image satisfaction in males and females. *Journal of Social and Clinical Psychology, 16,* 95-110.

Richardson, T. M., & Benbow, C. P. (1990). Long-term effects of acceleration on the social-emotional adjustment of mathematically precocious youths. *Journal of Educational Psychology, 82,* 464-470.

Rosenberg, M. (1989). *Society and the adolescent self-image*. (Rev. ed.). Middeltown, CT: Wesleyan University Press.

Shea, M., & Pritchard, M. E. (2007). Is self-esteem the primary predictor of disordered eating? *Personality and Individual Differences, 42,* 1527-1537.

Smolak, L., & Levine, M. P. (1994). Toward an empirical basis for primary prevention of eating problems with elementary school-children. *Eating Disorders: The Journal of Treatment and Prevention, 2,* 293-307.

Steele, A., Corsini, N., & Wade, T. D. (2007). The interaction of perfectionism, perceived weight status, and self-esteem to predict bulimic symptoms: The role of 'benign' perfectionism. *Behaviour Research and Therapy,*

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45, 1647-1655.

Tata, P., Fox., J., & Cooper, J. (2001). An investigation into the influence of gender and parenting styles on excessive exercise and disordered eating. *European Eating Disorders Review, 9,* 194-206.

Vohs, K. D., Bardone, A. M., Joiner, T. E., Jr., Abramson, L. Y., & Heatherton, T. F. (1999). Perfectionism, perceived weight status, and self-esteem interact to predict bulimic symptoms: A model of bulimic symptom development. *Journal of Abnormal Psychology, 4, 695-700.*

Wilcox, S. (1997). Age and gender in relation to body attitudes: Is there a double standard of aging? *Psychology of Women Quarterly, 21,* 549-565.

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Table 1

Means (and Standard Deviations) of Weight preoccupation Behaviors and Self Esteem by Gender

	Women	Men	*t*
Self Esteem	2.11 (0.51)	2.15 (0.54)	0.96
Weight Preoccupation	34.24 (21.56)	19.19 (16.38)	8.91***

Note: *** $p \leq .001$; Items were rated on a scale from *0=never* to *4=always)*. Sum scores were created for each variable, with higher scores indicating more weight preoccupation. Scores could range from 0 to 100.

Table 2

Results of Hierarchical Regression Analysis on Weight Preoccupation

Variable	*B*	*SE B*	*β*	*t*	ΔR^2	*ΔF*	*Δ df (1, 2)*
Step 1					.31	121.79***	2, 556
Gender	-14.27	1.51	-.34	-9.43***			
Self esteem	-17.41	1.45	-.43	-12.03***			
Step 2					.01	6.82**	1, 555
Gender	-14.34	1.50	-.34	-9.56***			
Self esteem	-20.67	1.91	-.51	-10.84***			
Gender * Self esteem	7.59	2.91	.12	2.61**			

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Figure Caption
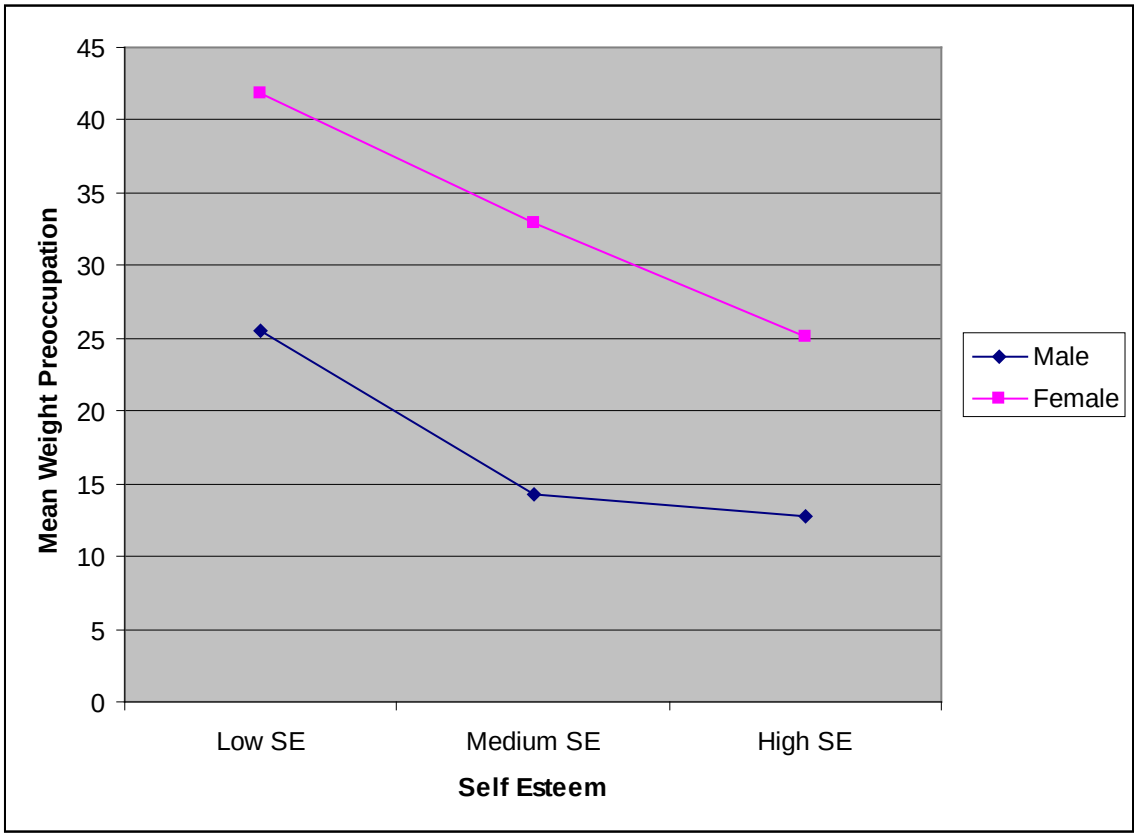
Figure 1. The influence of level of self esteem on weight preoccupation by gender.