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Gender Differences between Body Weight and Psychological Well-Being during Young Adulthood: A Brief Report

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This study investigated the relationship between gender, body weight and psychological well-being among a sample of college students. Results indicated that compared to participants in the "normal" weight range, participants classified as "overweight/obese" reported lower levels of life satisfaction. Further analyses found that among males, but not females, increases in body mass index (BMI) were associated with lower levels of life satisfaction and psychological well-being. Results are discussed in relation to stigma theory and gender-specific cultural norms regarding weight.

Keywords: body mass index, body weight, gender, well-being

Obesity is a serious public health problem that affects millions of Americans yearly and has been linked to health issues such as cardiovascular disease, diabetes, hypertension, and some types of cancer (Allison, Fontaine, Manson, Stevens, & VanItallie, 1999; Berke & Morden, 2000; "Health Consequences," 2008). Allison et al. (1999) examined the deaths that were attributed to obesity in 1991 and the data from five cohort studies (Alameda Community Health Study, Framingham Heart Study, Tecumseh Community Health Study, American Cancer Society Prevention Study I, & the National Health and Nutrition Examination Study I Epidemiological Follow-up Study) were examined. Over 80% of the deaths were attributed to individuals whose body mass index (BMI) was greater than 30. This study shows a strong relationship between obesity and mortality in the United States. Besides mortality and chronic disease, obesity is associated with a low quality of life. This study also points out that obesity is a major public health problem and will continue to worsen unless prevention and intervention increase.

The relationship between body weight and psychological factors is well-known but inconclusive (Corica et al., 2008; Friedman & Brownell, 1995; Friedman, Reichmann, Constanzo, & Musante, 2002; Wadden & Stunkard, 1993). For example, Corica et al. (2008) examined the relationship between obesity and the psychological variables of health-related quality of life. The study found that psychological factors were a major correlate with obesity and that psychological disturbances can contribute to poor perceived health status, distress, and functional impairment. Other studies have found inconclusive results. Carr, Friedman, and Jaffe (2007) examined the association between BMI, positive affect, and negative affect. It was found that obese individuals (BMI $\geq$ 30.0 kg/m2) had higher levels of negative affect when compared to thinner individuals in the study, but positive affect varied between the overweight and obese weight categories. Overall, the study revealed that an elevated BMI is not necessarily distressing and that the obese participants in this study had better psychological functioning when compared to participants with lower BMI. Finkelstein (2000) examined the relationship between BMI and health-related quality of life among of a sample of primary care patients. The study found that health-related quality of life scores varied between BMI levels (e.g., normal, overweight, and obese). Because the variation in scores, it was suggested that individuals should strive to achieve a healthy weight because this has been related to maximizing subjective well-being levels.

Gender may also play a role in the relationship between body weight and well-being (Bookwala & Boyar, 2008; Carr & Friedman, 2005; Chen & Brown, 2005; Cossrow, Jeffery, & McGuire, 2001; Faulkner et

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al., 1999; Neumark-Sztainer et al., 2002). Bookwala & Boyar (2008) examined the relationship between gender, BMI, and psychological well-being among a sample of adults from the National Survey of Midlife Development in the United States I, with the participants being between the ages of 25 to 74 years. The study found that higher BMI was associated with lower psychological well-being scores in women, but not for men. In addition, women who were overweight and obese had lower psychological well-being scores when compared to those in the normal BMI group. Among men, there was no difference found between BMI and psychological well-being scores. Overall, this study indicated that gender was a moderator in the relationship between BMI and well-being.

Studies examining gender differences associated with subjective well-being and body weight are scarce, particularly with the young adult population. Subjective well-being can be defined as, "how people evaluate their lives, and includes variables such as life satisfaction…lack of depression and anxiety, and positive moods and emotions" (Diener, Suh, & Oishi, 1997, p. 25). In this paper, the terms "well-being," "quality of life," and "health-related quality of life" are used interchangeably due to the overlap in meaning. When used in this manner, it facilitates the conceptualization of the research that addresses these psychological aspects and the relation to differences in body weight. Therefore, the purpose of this study was to examine these differences in a college population. We hypothesized a negative relationship between body weight and subjective well-being. Furthermore, we also hypothesized that this relationship would be greater for females compared to males.

Method

Participants and Measures

Undergraduate students (N = 157) from a medium sized university in the Midwest participated in this study. One hundred and twenty one females and 36 males participated, with ages ranging from 18 to 25 (M = 19.8, SD = 1.9). Sixty-six percent of the sample were Euro-American, 15% were Asian/Pacific Islander, and 12 % were African American. Height and weight were measured using the SECA Model 703 Digital Column Scale. Prior to each use, the scale was calibrated and set at zero. Each day the scale was used, it was calibrated before participant measurements were taken. The BMI function on the SECA Model 703 Digital Column Scale was used to calculate this index rather than by hand in order to reduce measurement error. Participants were classified as being in the "normal" weight range (n = 102; BMI = 18.5 kg/m2 to 25.0 kg/m2), "overweight" range (n = 39; BMI ≥ 25.1 to 29.9 kg/m2), or the "obese" range (n = 16; BMI ≥ 30.0 kg/m2). The "underweight" BMI category was not part of the study parameters. Because of the small sample size of the "obese" weight range (n = 16; BMI ≥ 30.0 kg/m2), this weight group was added to the "overweight" group (n = 39) to increase group sample size (see Table 1). An independent t-test was conducted to determine group differences between the "overweight" and "obese" weight groups. It is important to note that the there were no significant differences between the mean scores for the "overweight" (M = 68.9) and "obese" (M = 66.5) group Psychological General Well-Being Index (PGWB; p = .55) scores and the "overweight" (M = 23.9) and "obese" (M = 22.1) group Satisfaction with Life Scale (SWLS; p = .32) scores.

Subjective levels of well-being and life satisfaction were assessed using the PGWB (Dupuy, 1984) and Satisfaction with Life Scale (SWLS; Pavot & Diener, 1993). The PGWB measures an individual's "self-representations of intrapersonal affective or emotional states reflecting a sense of subjective well-being or distress" (Dupuy, 1984, p. 170). The questionnaire consists of 22 items assessing the following six domains: anxiety, depressed mood, positive well-being, self-control, general health, and vitality. Each item has a Likert scale response ranging from 0 to 5 (total scores = 0 to 110; higher scores are associated with greater levels of general well-being). While a total of six domains can be assessed, only the overall PGWB score was used due to sample size limitations. This questionnaire has been found to be reliable and valid (α = .92; Dupuy, 1984). The SWLS measures global life satisfaction and consists of 5 items that use a Likert scale rating ranging from 1 (strongly disagree) to 7 (strongly agree). Total scores range from 5 to 35 with higher scores associated with greater life satisfaction (Pavot & Diener, 1993). This questionnaire has been found to be reliable and valid (α = .87; Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993).

Table 1

Participant Weight Classifications

Gender	Normal BMI (n)	Overweight (n)	Obese (n)
Females (n = 121)	84	29	8
Males (n = 36)	18	10	8

Note. The "obese" weight group was combined with the "overweight" weight group when comparing group means on the primary

Results

A Multivariate Analysis of Variance (MANOVA) was conducted to examine the hypothesis that body weight and gender are related to self-reported life satisfaction and psychological well-being. A main effect was found for body weight and SWLS scores. Compared to participants in the "normal" weight range, participants classified as "overweight/obese" reported lower SWLS scores, indicating lower levels of life satisfaction, $F(1, 156) = 4.68$, $p = .03$, $R = .04$. Males in the overweight/obese category reported lower life satisfaction levels than females, although this finding was not statistically significant. No other main or interaction effects were found (see Tables 2 & 3).

Additional correlational analyses were conducted separately for males and females. Among males, increases in BMI were associated with lower scores on the SWLS ($r = -.37$, $p = .03$) and PGWB ($r = -.33$, $p = .05$), suggesting that as BMI increases, life satisfaction and psychological well-being decrease for males. However, BMI was not correlated with scores on the SWLS ($r = -.06$, $p = .53$) or PGWB ($r = .13$, $p = .17$) among females.

Discussion

This study examined the relationship between body weight, gender, psychological well-being, and life satisfaction among a young adult population. The findings from the correlational analyses suggest that for males but not females, increased body weight, as measured by BMI, is associated with both lower life satisfaction and psychological well-being. These findings are inconsistent with our hypothesis and in contrast to previous research (Bookwala & Boyar, 2008; Carr & Friedman, 2005; Chen & Brown, 2005; Cossrow, Jeffery, & McGuire, 2001; Faulkner et al., 1999; Neumark-Sztainer et al., 2002). This finding adds to the literature documenting the beginning of an increase in eating-related disorders and body image disturbance in men (Barlett, Vowels, & Saucier, 2008; Forrest & Stuhldreher, 2007; Warren, 2008). Although not examined in this study, sub-clinical features such as excessive weightlifting are increasing as well highlighting the importance of these findings (Grieve, Newton, Kelley, Miller, & Kerr, 2005).

One possible reason why relationships between life satisfaction, psychological well-being, and BMI were not observed among females in our study may be due to having better defense mechanisms to cope with obesity-related stress. According to Hughes and Degher (1993), feelings of distress may be derived from deviant identities which are assigned by society to stigmatize obese individuals. Our results suggest that females may be more effective than males at coping with their deviant identities by using strategies such as avoidance, reaction formation, and compliance. Another reason that obese females may experience lower levels of psychological consequences could be the influence of other mediating factors which prevent them from experiencing psychosocial despair. A study by Dierk et al. (2006) suggests that high levels of social support and above average social skills could act as protective factors for obese individuals, and may actually be a stronger predictor for subjective well-being than BMI. While these are two plausible explanations for obese

Table 2

Mean SWLS Scores

Gender	Normal BMI (SD)	Overweight/Obese BMI (SD)	Total
Females	25.1 (5.9)	24.1 (5.8)	24.8 (5.8)
Males	25.7 (3.3)	21.9 (5.9)	23.8 (5.0)
Total	25.2 (5.5)	23.4 (5.9)	

Table 3

Mean PGWB Scores

Gender	Normal BMI (SD)	Overweight/Obese BMI (SD)	Total
Females	66.3 (13.6)	68.3 (15.3)	66.9 (14.1)
Males	70.2 (9.5)	68.2 (10.6)	69.2 (10.1)

females reporting higher well-being levels than their male counterparts, future research is needed to confirm these hypotheses.

Why are males with high BMI susceptible to lower well-being and life satisfaction levels? One possible explanation is that men, and not just women, are experiencing increased pressure from the mass media to portray an idealized and possibly unrealistic body image. A recent meta-analysis suggests that the mass media creates demands for males to increase muscle mass and decrease weight, which can lead to low self-esteem and decreased body satisfaction (Barlett, Vowels, & Saucier, 2008). In addition to media pressure, research also indicates that body dissatisfaction and body distortion are increasing for males, especially for men with higher BMI levels (Forrest & Struhldreher, 2007). Studies show these negative ideals relating to body image are emerging cross-culturally, as Euro-Americans and ethnic minority cultures alike are faced with the obesity epidemic (Warren, 2008). While preliminary evidence has linked body dissatisfaction with maladaptive behaviors (e.g. steroid use, excessive exercising) and depression (Barlett, Vowels, & Saucier, 2008), additional research is needed to explore this growing concern among males.

Several limitations should be noted with the present study. First, the sample size was relatively small, particularly for males. As a result, limitations were placed on statistical analysis due to issues of low power. For example, only the overall score of the PGWB was used to measure subjective well-being instead of additionally taking into account the six domains individually. Therefore, it is unknown what particular aspects of well-being are more strongly related to body weight. Next, participant demographics are limited. The sample consisted of a primarily Euro-American population attending a university in the Midwest. Future studies should examine a more diverse population. Despite these limitations, results suggest that further research is warranted on this topic. A larger sample size examining a greater number of psychosocial and sociodemographic variables may help clarify the relationship between body weight, gender, and psychological factors such as life satisfaction and well-being. Understanding these relationships may be important for developing successful preventive and treatment interventions for weight management.

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