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## GENDER DIFFERENCES IN MOTIVATION TO RESOLVE EATING AND BODY IMAGE CONCERNS IN COLLEGE STUDENTS

HAROLD MERRIMAN<sup>1</sup>, C. JAYNE BRAHLER<sup>1,2</sup>, LAURA DINAN<sup>2</sup>,  
LAUREN FINZER<sup>2</sup>

<sup>1</sup>Doctor of Physical Therapy Program/ Department of Health & Sport Science,  
University of Dayton, Dayton, Ohio

<sup>2</sup>Department of Health & Sport Science/ University of Dayton, Dayton, Ohio

### ABSTRACT

**Merriman H, Brahler CJ, Dinan L, Finzer L.** Gender Differences in Motivation to Resolve Eating and Body Image Concerns in College Students. *JEPonline* 2008;11(5):24-34. The objective of this study was to identify similarities and differences between college women and men with respect to their eating and body image concerns, weight fluctuation and level of motivation to resolve these concerns. 101 University of Dayton college students participated in this study. Students completed an eating and body concern survey online. Body image concerns were significantly greater for females compared to males ( $p=0.007$ ) and significantly greater as motivation level to resolve the concerns increased ( $p=0.019$ ). Eating concerns followed the same trends but did not reach statistical significance. Weight fluctuation in both genders increased significantly as motivation level increased ( $p=0.047$ ). Important eating and body image concerns exist in college students with higher levels of concern being paired with higher levels of motivation to resolve them. Body image concerns are significantly different between genders whereas eating concerns are not.

**Key Words:** BMI, Diet, Health, Obesity, Overweight.

## INTRODUCTION

The rising rate of eating disorders is well-documented among young adults in the United States as well as in the rest of the developed world (1-4). Although the prevalence of the most common eating disorders—anorexia nervosa, bulimia nervosa and binge eating disorder—is not as well documented, recent data from population-based interviews conducted in the United States indicate that the lifetime prevalence of these 3 disorders combined is 5.9% in women and 2.8% in men with the peak rise for developing eating disorders occurring during adolescence and early adulthood (5). In comparison, questionnaire-based surveys have reported partial-syndrome binge eating disorder rates of 9.1% - 41% in college females (6). The rise in eating disorders is especially alarming since binge eating disorder is often associated with obesity (7).

Obesity and its harmful side effects are of increasing concern in the entire population of the United States. Obesity is defined as a body mass index (BMI) of  $> 30 \text{ kg/m}^2$  and overweight as a BMI of  $> 25\text{-}29.9 \text{ kg/m}^2$  using the formula  $(\text{BMI}) = \text{body weight divided by height in } \text{kg/m}^2$ . The most alarming recent trend concerning obesity is the higher obesity rates observed in children and young adults. Data from the National Health and Nutrition Examination Survey (NHANES) gathered in 2003-2004 report that 17.1% of U.S. children and adolescents are overweight and 32.2% of adults are obese (8). In U.S. colleges it now appears that one-third or more of students are overweight or obese (9-11). These figures contrast historical data from the NHANES showing that less than 5% of U.S. children and adolescents were overweight and less than 15% of adults were obese in the 1960s (12).

The harmful medical and economical effects of obesity are well documented. Obesity is associated with increased risk of developing type 2 diabetes, hypertension, hypercholesterolemia, metabolic syndrome, heart disease, stroke, certain types of cancer, arthritis, sleep apnea and asthma as well as diminished levels of self-esteem and academic achievement (13-15). Clearly, the U.S. population is at great risk of declining health due to the problems of overweight and obesity. The U.S. Department of Health and Human Services considers overweight and obesity among the 10 leading health indicators in its health objectives for the U.S. called *Healthy People 2010* (16). In addition, the economic implications of obesity on the health care system are significant, accounting for about 9% of total health care costs which rivals the health care costs attributed to cigarette smoking (17).

Eating disorders are closely linked to body image concerns in all age groups from children to adults (18-21). There is still much to be learned about the relationship between body image, obesity, and health status. This is particularly true in the 18-22 year old college-aged population because development of eating disorders and body image concerns are widespread during this time period (22,23). The purpose of this study was to explore the relationship between gender, weight fluctuation, eating and body image concerns, and the motivation college students have to resolve these concerns. We postulated that the University of Dayton Counseling Center data would support the trends reported in the current literature. Specifically, we hypothesized that female college students would exhibit higher levels of eating and body concerns and would be more motivated to resolve their concerns as compared to male college students.

## METHODS

### Subjects

The University of Dayton Institutional Review Board for the protection of human subjects approved this study. Study participants were recruited via email solicitations sent to University of Dayton general education class Listserv during the fall semester of 2006. The email solicitation explained the purpose of the study, assured students that their responses would be anonymous and indicated that by completing the survey each college student was consenting to participate in the study.

## Measurements

The University of Dayton Eating Assessment and History Form and the Eating/Body Concerns Checklist (UDEA) were posted online using Microsoft FrontPage, a web site administration tool. The UDEA is used as a screening instrument at the University of Dayton Counseling Center for college students seeking assistance with eating disorders (24). The UDEA has face validity but has not been otherwise validated (24) or shown to have test-retest reliability. It was developed at the University of Dayton to support the goal of individualized, self-determined treatment of eating disorders. The survey consists of two parts. The first part is a 23-question section focusing on demographics, weight

**Table 1: Motivation Constructs.**

<b>Level</b>	<b>Statement</b>
<b>1</b>	I'm not overly concerned about this and am primarily here because others have suggested it.
<b>2</b>	I don't know if I'm willing to commit time and energy to this at this point in my life.
<b>3</b>	I'm unsure about how much I can or want to change, so I'll wait and see how it goes.
<b>4</b>	I'm totally committed to resolving this but I wonder how much it will help.
<b>5</b>	I'm totally committed to resolving this and will put time and energy into the process.

history, ideal body weight, eating habits and motivation level and methods to resolve body image concerns and eating concerns. In addition, students provided estimates for what their highest and lowest body weights had been over the past five years. The difference between the reported high and low weight values was used to represent "weight fluctuation". Weight fluctuation was then divided by ideal body weight and expressed as weight fluctuation as a percentage of ideal body weight to account for the difference in male and female body weights on average. Table 1 displays the selections on the survey that represent student motivation to resolve eating and body image concerns ranked from 1 to 5 with 1 representing the least motivation and 5 the highest motivation to resolve these concerns.

**Table 2: Health Concern Constructs.**

<b>Eating</b>	<b>Body Image</b>
<i>I don't know what normal eating is.</i>	I worry about how I look at least ten times per day.
<i>I feel really nervous when I eat food that is not low fat.</i>	I believe that if I were thinner I would have better relationships.
<i>I don't understand the concept of set-point.</i>	I am self-critical about my looks.
<i>I count grams of fat.</i>	I avoid looking in the mirror.
<i>I rarely eat a balanced meal.</i>	I am constantly checking myself out in the mirror.
<i>I divide the world of food into "good" food and "bad" food.</i>	I often am envious of other's appearances.
<i>I don't have a good understanding of the role of carbohydrates, fats, proteins in my body.</i>	I don't have many clothes I look good in.
<i>There are a limited number of foods I feel comfortable eating.</i>	I believe that thin people have higher self-esteem than larger people.
<i>I believe I will have a diet forever.</i>	I hate my body.

The second section of the UDEA contains specific statements that express health concerns associated with disordered eating and a negative body image. There are nine at-risk behaviors for

eating concerns and nine for body image concerns. Survey respondents were asked to check each statement they felt was a true statement for them. As such, a score of 0-9 was possible for each subscale depending on the number of statements a respondent checked. A higher score in a category indicated an increased risk for disordered eating and/or negative body image, respectively. Table 2 displays the selections on the survey that represented eating concerns and body image concerns.

### Statistical Analyses

Data were collected in a Microsoft Access database, a content analysis was performed and exported to SPSS (Statistical Package for the Social Sciences; Version 14) for statistical analyses. Descriptive statistics were calculated for all variables. Univariate general linear model (GLM) tests were run to determine if there were statistically significant differences between genders and motivation levels (independent variables) with regard to eating concerns, body image concerns, weight fluctuation, or weight fluctuation expressed as a percentage of ideal weight (dependent variables) and to determine if there were significant interactions between gender and motivation level for any of the dependent variables.

## RESULTS

One hundred and one University of Dayton college students (52 female, 49 male) completed the UDEA. The class breakdown was as follows: freshman-8; sophomore-86; junior-5; senior-2. The age range was 17 to 22 years, with the mean age of 19.2 years. Respondents came from more than 11 different majors, representing all colleges at the University of Dayton (Table 3).

There was a statistically significant difference in the number of body image concerns that were selected between the five different levels of motivation to resolve these concerns ( $p = 0.019$ ). Males

**Table 3: Frequency Count by Declared Major.**

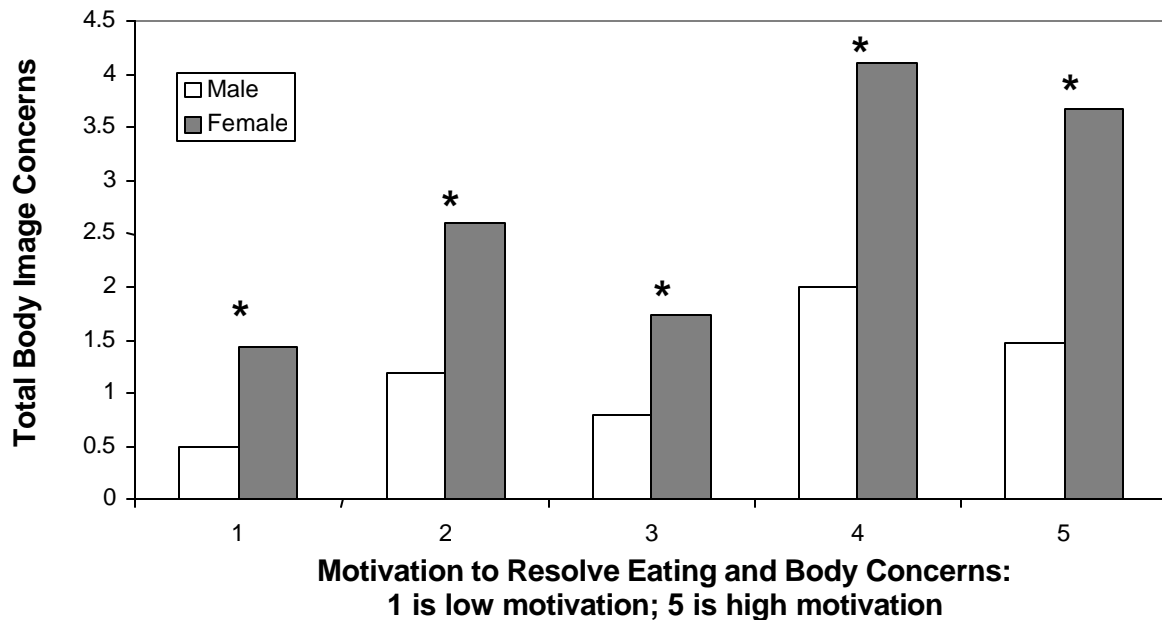
<b>Declared Major</b>	<b>Frequency</b>
<b>Accounting</b>	5
<b>Art</b>	5
<b>Biology</b>	8
<b>Business</b>	14
<b>Criminal Justice</b>	4
<b>Communication</b>	7
<b>Education</b>	17
<b>Engineering</b>	5
<b>Exercise Science</b>	10
<b>Pre Physical</b>	8
<b>Therapy</b>	
<b>Psychology</b>	7
<b>Undeclared/Other</b>	11

and females alike paired an increased motivation to resolve their concerns with an increased number of body image concerns. More striking however, was the significant gender difference with respect to motivation to resolve body image concerns and the actual number of body image concerns selected ( $p = 0.007$ ). Female students selected more body image concerns as compared to male students for any given level of motivation to resolve the concerns (Figure 1). In contrast, there was not a statistically significant difference in the number of eating concerns selected between the five different levels of motivation to resolve these concerns ( $p = 0.302$ ) nor was there a significant difference in number of eating concerns selected between the genders ( $p = 0.127$ ). There was not a statistically significant interaction between gender and motivation level regarding eating or body image concerns ( $p = 0.303$  and  $0.699$ , respectively).

We did find statistically significant differences in weight fluctuation (in pounds) between males and females ( $p = 0.009$ ) and in weight fluctuation between the different motivation levels ( $p = 0.037$ ). There was a similar trend for both genders in that weight fluctuation increased as motivation to resolve eating and body image concerns increased, however, weight fluctuation was greater for male students compared to the female students at any given level of motivation. The only exception to the trend was that weight fluctuation was greater at motivation level one compared to motivation level two for both genders (Table 4). There was not a significant interaction between gender and motivation level with regard to weight fluctuation.

**Table 4: Estimated Difference between Highest and Lowest Weights in Pounds in the Last Five Years (mean  $\pm$  SD).**

Motivation Level	Gender	Weight Difference in Pounds
1	Male	31.90 $\pm$ 5.90
1	Female	19.29 $\pm$ 7.05
2	Male	17.00 $\pm$ 8.34
2	Female	13.60 $\pm$ 8.34
3	Male	30.36 $\pm$ 4.99
3	Female	16.64 $\pm$ 5.62
4	Male	35.00 $\pm$ 18.65
4	Female	20.78 $\pm$ 6.22
5	Male	47.67 $\pm$ 4.40
5	Female	21.21 $\pm$ 4.28



**FIGURE 1. Body image concerns and motivation to resolve eating and body image concerns in college students. \*Significant gender difference with respect to motivation to work on body image concerns and the actual number of body image concerns selected ( $p=0.007$ ).**

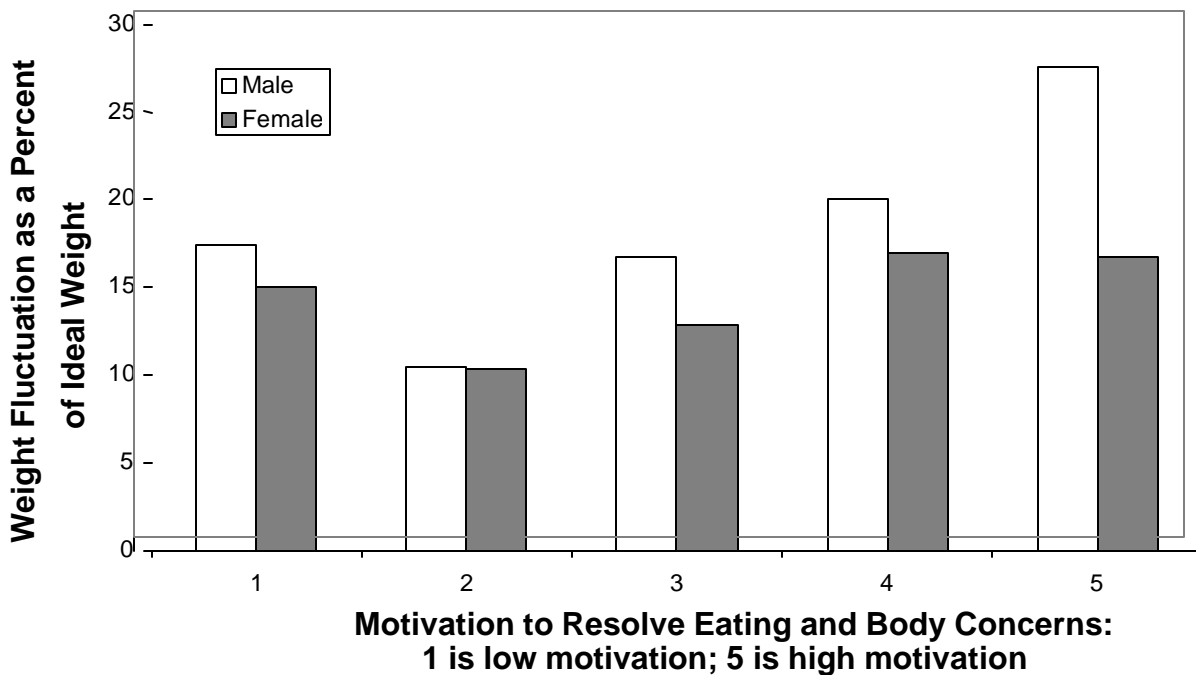
When weight fluctuation was expressed as a percent of ideal weight, there was still a significant difference in weight fluctuation between the 5 different levels of motivation to resolve eating and body image concerns ( $p = 0.047$ ) with the greater weight fluctuation being paired with increasing motivation level to resolve the concerns (Figure 2). The trend remained the same as described above in that weight fluctuation increased as motivation to resolve eating and body image concerns increased, and weight fluctuation expressed as a percent of ideal weight was still greater for male students compared to the female students at any given level of motivation. The only exception to the

trend was still that weight fluctuation was greater at motivation level one compared to motivation level two for both genders. However, this trend showed no statistically significant difference in weight fluctuation between males and females once weight fluctuation was expressed as a percentage of ideal body weight ( $p = 0.250$ ).

Survey respondents were provided open text boxes in which to respond to several questions. For example, they were asked what their preferred methods would be for working to improve their eating and body image concerns. Content analysis of the responses revealed that in general, female students preferred to resolve their eating and body image concerns using a combination of exercise and diet, while males preferred exercise alone. When asked what they perceived might change in their lives if they were able to accomplish their body weight goals, males and females responded similarly, with feeling better, increased happiness, increased confidence and better appearances being the most prevalent answers.

## DISCUSSION

We set out to study gender similarities and differences relating to eating and body image concerns present in an undergraduate college population consisting of both men and women. For this study we used the UDEA which is normally administered to University of Dayton students seeking assistance with eating/body concerns from the university's counseling center. This survey also assesses students' motivation levels to resolve identified concerns.



**FIGURE 2.** Weight fluctuation and motivation to resolve eating and body image concerns in college students.

Numerous researchers have examined the issues of obesity, excess weight, body image and eating disorders in the college population of either exclusively or predominantly female college students (3,4,25-28), and relatively fewer studies have compared these same issues in both male and female college students (1,10,13,29,30). However, to our knowledge, no one has explored the relationship between gender, weight fluctuation, eating and body image concerns, and the motivation college students have to actually resolve these concerns.

Both sexes had a statistically significant increased motivation to resolve their concerns as the number of their body image concerns increased (see Figure 1). Perhaps this increased motivation is based on a heightened sense of desperation resulting in the adoption of unhealthy behaviors. Our findings that female as compared to male students (see Figure 1) had an increased level of total body image concerns for a particular motivational level to resolve those concerns is supported by the findings of Wardle et al. (30). They found that as university students' weight increased there were gender differences in that women were much more likely than men to attempt losing weight. This gender difference is well supported in the literature. Women as opposed to men are more likely to attempt to lose weight and to have higher levels of eating and body concerns. In addition, male adolescents as well as male college students exhibit less body dissatisfaction with their bodies than do females (1,28,31-33).

It is not surprising that we found the greatest weight swings in students of both sexes who are most motivated to resolve eating and body concerns, since the most motivated students were furthest from their ideal weight (see Figure 2). One possible interpretation of these findings is that the increased effort by students to lose weight actually causes the unhealthy behavior of frequent weight fluctuation. This finding is supported by studies that indicate a positive association between increasing BMI and a student's attempt to lose weight (30,34). In addition, increased dieting frequency as well as abnormal eating and weight control behaviors are associated with increased concerns about weight and body dissatisfaction (35).

Our findings show that female college students employ a greater variety of strategies to control weight than do male college students. Specifically in our study, females preferred a combination of strategies, namely exercise and diet, while males preferred exercise alone. This finding is also supported by previous studies showing that men employ fewer strategies for weight control (11,31). Not only do male students use fewer weight control strategies, but male college and university students are less likely to seek help for their disordered eating, weight control, and binge eating (36).

The UDEA was developed by the Counseling Center at the University of Dayton to support individualized, self-determined treatment of eating disorders and to enhance college student and therapist collaboration (24). It has face validity (24) but has not been otherwise validated or shown to have test-retest reliability. In its current usage, the college student is given the primary responsibility for the content, pace and goals of his/her treatment. An individualized intervention strategy is agreed upon between the college student and therapist and organized into three levels according to time commitment and degree of change required from the college student, as described previously (24). This protocol is specifically tailored to the individual and has many possible treatment combinations and outcomes. For these reasons, there has never been an analysis completed to determine if collectively, the University of Dayton data support the trends reported in the scholarly literature.

One potential limitation of the study is that the UDEA did not ask for the race, ethnicity or country of birth of the survey participants. A number of studies looking at college-age students have shown that important racial and ethnic differences do exist concerning body image, ideal weight and actual weight. For example, white college students as compared to black college students are more dissatisfied with their bodies, diet more frequently and choose smaller body figures while black college females are more tolerant of a variety of body sizes (37,38). Another study comparing university students living in different countries found important body image and weight control differences in that men and women from Asian countries showed lower BMI values but interesting also higher levels of trying to lose weight than students living in Europe or the United States (30). As more international students come to the United States to study at the college and university level,

their attitudes toward body image and weight control could have an impact on studies such as this one, with the result that the present study may not have accurately described the body image concerns of American-born college and university students. However, the student body at University of Dayton is 91.3% Caucasian, so it is likely that the predominant majority of study participants were Caucasian.

Another potential limitation of the study is that the participants in this study used a subject self-reporting format instead of an interviewer-administered format. For example, Wardle et al. (30) has shown that more female university students than male university students feel overweight at a given BMI level, and in particular men at the highest BMI levels were less aware that they are overweight. However, the anonymity of the online survey could also be perceived as a potential strength if it caused respondents to feel comfortable in providing truthful information. Another concern using a self-reporting questionnaire is the rather loose definitions that lay people have of what constitutes an eating disorder. While precise definitions of eating disorders exist among clinical professionals, these definitions are not likely to be well-understood by survey participants (39).

## CONCLUSIONS

Briefly, we found that body image concerns were significantly greater for females compared to males. We also found that body image was a significant motivator in resolving concerns about increased body weight. In addition to supporting the existing body of scholarly literature, the current study makes two significant contributions to the scholarly literature. First, it further investigates the relationship between gender, weight fluctuation, eating and body image concerns, and the motivation college students have to resolve these concerns. These complex relationships need to be better understood to help college students and the general public prevent the rising trends of overweight, obesity, and eating disorders. Second, it demonstrates the value of administering an eating assessment survey to a general group of college students whereas usually only students seeking help with eating disorders would complete such a survey. The fact that the current study identified trends within the general population that would be expected for an eating disordered sample points to the potential need to screen the general college-aged student population to help identify college students who might benefit from intervention.

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**Address for correspondence:** Harold Merriman, PT, PhD, Doctor of Physical Therapy Program, Department of Health & Sport Science, University of Dayton, 300 College Park, Dayton, OH 45469-2925 (e-mail: [merriman@udayton.edu](mailto:merriman@udayton.edu))

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