Recent research indicates that the prevalence of both non-clinical and clinical eating disorders is on the rise for women ages 15 to 29 (Holston & Cashwell, 2000). Disordered eating, or eating disorders that do not reach clinical significance, are particularly on the rise (Striegel-Moore, Silberstein, Frensch, & Rodin, 1989). Whereas previously, anorexia (refusal to maintain a body weight of at least 85 percent of normal weight for age and height, an intense fear of gaining weight, amenorrhea for at least three consecutive months, and body weight and shape disturbances, Diagnostic and Statistical Manual for Mental Disorders IV Text Revision, American Psychiatric Association, 2000) and bulimia (recurrent episodes of binge eating and inappropriate compensatory behaviors to avoid weight gain at least two times a week for three consecutive months; self-evaluation is based on body shape and weight, DSM-IV TR, 2000) were considered the only types of eating pathologies; eating disorders are presently thought to exist on a continuum. This continuum ranges from healthy eating behavior on one end of the spectrum to extreme dieting, or the classification of a severe eating disorder, on the other (Hendley, 2002; Parham, Lennon, & Kolosi, 2001; Zuckerman, Colby, Ware, & Lazerson, 1986). The key symptoms associated with disordered eating are body dissatisfaction and a preoccupation with food, weight and body shape (Polivy & Herman, 2002).

Factors Associated With Disordered Eating

In order to combat the increased prevalence of disordered eating, research has focused on identifying factors related to increased risks of developing disordered eating patterns. Many factors have been found to contribute to an increased risk with varying degrees of relatedness. A general consensus in the literature is that white, female college students are the most at risk group for developing disordered eating patterns (Kinzl et al., 1998; Zuckerman et al., 1986). Other characteristics that have been linked to increased prevalence include low self-esteem (Brouwers, 1988; Hagan, Tomaka, & Moss, 2000; Mayhew & Edelmann, 1989; Polivy & Herman, 2002), guilt, indecision, general life dissatisfaction (Brouwers, 1988), perfectionism, gender, race, obsessive thoughts, (Polivy &
Figure dissatisfaction. Some researchers suggest that figure dissatisfaction may play a unique role in the development of disordered eating and may be the strongest predictor of the escalation of disordered eating throughout one's freshmen year of college (Cooley & Toray, 2001). Rates of figure dissatisfaction tend to be higher for women than for men. Ninety-four percent of freshmen women in one sample reported that they wanted to weigh an average of 14.52 pounds less than their current weight. Of this same sample, those scoring higher on a measure of bulimia tended to have more figure dissatisfaction and were more likely to face worsening eating pathology by the end of their freshmen year of college than those who scored lower on a measure of bulimia.

When high school seniors were compared to college freshmen, more college freshmen reported figure dissatisfaction (Vohs, Heatherton, & Herrin, 2001) indicating that figure dissatisfaction appears to increase during students' freshmen year of college. Body image distortions also appear to be related to figure dissatisfaction. Some studies have found that about 50 percent of women and 13 percent of men consider themselves overweight, though only 10 percent from each gender actually were overweight according to national standards (Zuckerman et al., 1986). In other research, 57 percent of participants classified themselves as more severely overweight, or obese, though only ten percent of participants in this sample were actually obese (Brook & Tepper, 1997).

Self-concept. Figure dissatisfaction is closely related to self-concept. Both figure dissatisfaction and self-concept have been linked to higher levels of disordered eating (Heesacker, Samson, & Shir, 2000; Heesse-Biber & Marino, 1991). Self-concept is conceptualized as the beliefs that people hold about themselves. Downward shifts in self-concept ratings are common during early college years. Few young female college students experience an improvement in their level of self-concept compared to their pre-college ratings (Hesse-Biber & Marino, 1991). The relationship between self-concept levels and disordered eating symptomology is not completely understood. Further, research is unclear if self-concept levels change throughout the later years of college. Prevalence data for low self-concept ratings among the general college population are not discussed in disordered eating literature. If self-concept ratings are similar to those for figure dissatisfaction, then it, too, will be a poor predictor of disordered eating.

Class year and age. To test for the effects of age, a longitudinal study followed students ten years after they completed college (Heatherton, Mahamedi, Striepe, Field, & Keel, 1997). The study revealed that figure dissatisfaction, eating disorder symptoms, and chronic dieting eventually faded away. Eighty percent of participants that were diagnosed with clinical eating disorders while in college were no longer diagnosable ten years later. These results suggest that either age, college environment, or both may have played a role in disordered eating patterns.

Kirk, Singh, and Getz (2001) also found a relationship between students' class year and disordered eating. Compared to juniors and seniors, freshmen and sophomore students had higher rates of disordered eating. However, this study had a major constraint. Most of the freshmen and sophomores were non-athletes, whereas most of the juniors and seniors were athletes. Other research has used a longitudinal design to assess differences among individuals with and without disordered eating patterns. Researchers followed students from their senior year of high school through their senior year of college (Hesse-Biber & Marino, 1991). No significant increases in eating disorder prevalence were initially found. However, when the group was divided according to participants' eating disorder classification during their sophomore year in college, the group with disordered eating symptomology had significant increases in factors related to the development of disordered eating compared to students with no disordered eating classification. Students without disordered eating experienced significant differences in ratings of factors related to disordered eating when compared to their peers with disordered eating by their senior year in college. These differences did not exist prior to college (Hesse-Biber & Marino, 1991).

Perceived and actual stress. Research has shown that students with disordered eating perceive themselves as having more stress than do students without disordered eating (Striegel-Moore et al., 1989). This was measured by having students watch a set of scenes and assessing the amount of stress the participants felt afterwards. Participants with disordered eating rated the scenes as more stressful than students without disordered eating (Bittinger & Smith, 2003). This finding suggests that, despite actual levels of stress, students with disordered eating perceive themselves as experiencing more stress than do students without disordered eating. Additionally, high rates of perceived stress tend to be a predictor of an increase in disordered eating symptoms by the end of the freshmen year of college (Striegel-Moore et al., 1989). Lower levels of perceived stress, on the other hand,
were found to be a predictor for increased levels of life satisfaction (Simons, Aysan, Thompson, Hamarat, & Steel, 2002).

In order to get a more complete picture of the effects of perceived stress on disordered eating, research should look at time commitments of students with disordered eating. Because people with disordered eating tend to be competitive and strive for perfectionism (Brouwers, 1988; Cooley & Toray, 2001), it is likely that they will engage in more activities, attempting to fulfill their need for perfectionism. Because those with disordered eating symptomology also perceive themselves as having higher levels of stress, fulfilling needs for perfectionism and competition may aggravate their low stress tolerance and the inability to effectively solve problems and use effective coping strategies.

Logic of the Study

In order to further understand who is at risk for developing disordered eating symptomology, levels of figure dissatisfaction, perceived stress, and self-concept should be examined throughout all four years of college. Though research suggests that the prevalence of disordered eating tapers off years after college (Heatherton et al., 1997), few research studies have compared students of different class years to one another to examine changes in the college environment that may be related to the improvement, deterioration, or stability of disordered eating. If class year plays an important role, prevalence rates may decrease as students progress through college. However, if levels of disordered eating vary from year to year, stressors or pressures associated with the specific year of college may be related to disordered eating onset or relapse. Time commitments will also be studied, to see if students with disordered eating attempt to engage in more activities, which would also lead to increases in perceived stress, or cause these students to be less able to deal with stress. In addition, self-concept needs to be examined to see if it distinguishes students with disordered eating from those without disordered eating. Participants with higher rates of disordered eating are also expected to perceive college as more stressful than do students with lower disordered eating symptomology. Finally, lower self-concept scores are expected to correlate with higher disordered eating scores.

Method

Participants

A total of 185 students at a small, private, Midwestern university participated in this study. Females made up a larger part of the sample (n = 125) than did males (n = 60). Senior year students accounted for the largest portion of the sample (n = 57), sophomores made up the second largest portion (n = 45), and freshmen and juniors were equally represented (n = 42 each). Participants ranged in age from 17 to 30, with a mean age of 19.78 (SD = 1.52). Most participants indicated their ethnicity as Caucasian (n = 170); with other ethnicities including African American students (n = 4), Asian students (n = 2), Hispanic students (n = 2). Other participants did not indicate a race (n = 15).

Procedure

A cross-sectional design compared participants from each class (freshmen, sophomores, juniors, and seniors) on measures of stress, body satisfaction, self-concept ratings, and disordered eating. Questionnaires were distributed to students during the lunch hour and to psychology classes.

Measures

Demographics. Students were asked to report their age, gender, ethnicity, year in college, and various campus organizations in which they were involved.

Disordered eating. Eating disturbances were assessed using questions from the Eating Attitudes Test (EAT-26) related to a preoccupation with food, eating, and weight (Garner & Garfinkel, 1979). Twenty-five questions (e.g., “I am terrified about being overweight”) were scored on a 6-point likert scale (1 = never, 6 = always). One question from the EAT-26 was inadvertently left off the survey. Four additional questions used a 7-point likert scale (1 = never, 7 = more than once a day) to identify the frequency of abnormal behaviors, such as eating binges, vomiting, and laxative use. Questions concerning previous weight and eating disturbances were also included in the questionnaire. The EAT-26 uses three subscales: dieting, bulimia, and oral control, which comprise the total score for the test. The EAT-26 is used in this study because of its wide use and accuracy in self-reported testing for non-clinical populations (Mintz & O’Halloran, 2000).
**Figure dissatisfaction.** Figure dissatisfaction was assessed by using the Body Esteem Questionnaire (Franzoi & Shields, 1984). A 5-point scale (1 = never, 5 = all the time) was used to measure participant responses to questions such as “I like what I see when I look in the mirror.” This scale has proven to be reliable and valid (Franzoi, 1994).

**Perceived stress.** The Inventory of College Students Recent Life Experiences (Kohn, Lafreniere, & Gurevich, 1990) was used to assess stressful events particularly related to college students’ lives (e.g., “Dissatisfaction with school”). Participants were asked to rate how much these responses have been a part of their lives in the past month on a 4-point scale (1 = not at all part of my life, 4 = very much part of my life). This is a highly reliable and valid measure (Kohn et al., 1990).

**Self-concept.** Self-concept was assessed using the Self-Concept Clarity Inventory (Campbell et al., 1996). Students were asked to respond to 22 questions regarding attitudes toward themselves (e.g., “My beliefs about myself often conflict with one another”). Responses were scored on a 5-point scale (1 = strongly disagree, 5 = strongly agree). The scale was used because of its proven reliability and validity (Campbell et al., 1996).

**Results**

**Class year**

In order to test the significance between each year in college and each of the subscales on the EAT-26 (total score, diet, and bulimia), an analysis of variance was used. Results did not show a significant difference for disordered eating scores between class years, \( F(3, 181) = .10 \). Nonsignificant trends were observed in the hypothesized direction with: the sophomore class having the highest mean disordered eating (\( M = 6.90, SD = 8.22 \)), freshmen having the second highest mean (\( M = 6.48, SD = 6.96 \)), juniors having the lowest mean (\( M = 6.09, SD = 7.52 \)), and seniors having the third highest mean (\( M = 6.32, SD = 6.41 \)).

There was no significant effect of classification on disordered eating for females, \( F(3, 121) = .16 \), or for males, \( F(3, 55) = .04 \). Though the results for females were nonsignificant, the sophomore class had the lowest mean disordered eating (\( M = 7.60, SD = 8.40 \)). Freshmen had the second highest mean disordered eating scores (\( M = 6.83, SD = 7.35 \)), seniors had the highest mean (\( M = 6.63, SD = 5.18 \)), and juniors had the lowest mean (\( M = 6.37, SD = 7.78 \)). For males, seniors had the highest mean disordered eating (\( M = 5.84, SD = 7.82 \)), sophomores had the second highest mean (\( M = 5.63, SD = 8.00 \)), freshmen had the third highest mean (\( M = 5.45, SD = 5.92 \)), and juniors had the lowest mean disordered eating (\( M = 4.71, SD = 6.37 \)).

**Stress**

Higher perceived stress scores were moderately correlated with higher disordered eating scores, \( r = .29, p < .01 \). A subscale of the EAT-26 for bulimia showed a slightly higher correlation between perceived stress and bulimia, \( r = .31, p < .01 \). A moderate correlation between perceived stress and time commitment also existed, \( r = .22, p < .01 \).

**Self-Concept and Body Image**

As hypothesized, a moderate negative correlation was found between lower self-concept ratings and higher disordered eating ratings, \( r = -.37, p < .01 \).

In addition to the correlation between body image and self-concept, body image also was correlated with disordered eating, \( r = -.40, p < .01 \). Body image had a slightly higher correlation with dieting behavior, a subscale on the EAT-26, \( r = -.45, p < -.01 \).

**Discussion**

The main hypothesis for this study, that class year would be a predictor of disordered eating symptomology, was not supported by this research. However, the means were in the expected direction, with sophomores having the highest rates of disordered eating. An interesting finding occurred when participants were separated by gender, though trends were still nonsignificant. Sophomore females continued to have the highest rates of disordered eating and senior females had the lowest scores. This was not the case for males, however. Senior males had the highest EAT-26 scores and sophomores had the second highest rates.

Several possibilities could explain these results. First, because this sample was non-significant, class year could play no role in determining factors related to disordered eating in any college population. A longitudinal study would better test for this possibility. Other studies followed students from high school to college, or from college to middle adulthood, and found that disordered eating increased slightly, or not at all, from high school to college and tapered off by middle adulthood (Cooley & Toray, 2001; Hesse-Biber & Marino, 1991; Vohs et al., 2001). The present study suggests that age in college may have no effect on decreases in levels of disordered eating. However, because rates of disordered eating were slightly higher during men’s senior year (though nonsignificantly), these results suggest when studying disordered eating, researchers should examine disordered eating throughout college, not just throughout the freshmen year.
Additionally, gender differences regarding stress or other factors may be further examined in order to determine whether these factors affect disordered eating for males as compared to disordered eating for females. These insights will give researchers a more accurate understanding of what contributes to disordered eating symptomology. Another possible reason for the findings may be that the age range was too restricted. In order to find age-related differences in disordered eating, an extended period of time should be examined. Additionally, a longitudinal rather than a cross-sectional design may be better for research in disordered eating and age.

This study did support the second hypothesis: higher disordered eating symptomology was significantly related to higher levels of perceived stress. Other studies have found similar results (Striegel-Moore et al., 1989). Research has suggested that higher levels of perceived stress may be due to ineffective coping strategies or using more avoidant coping strategies than problem-focused coping strategies (Mayhew & Edelmann, 1989). The relationship between disordered eating and perceived stress was a moderate correlation, lending support to the idea that many factors contribute to disordered eating patterns. A larger effect may be found if results compare females only to each other, given that females tend to have disordered eating more often than males (DSM-IV TR, 2000). In addition, future research may look at the relationship of both perceived stress and coping strategies (e.g., avoidance and problem-focused strategies) and disordered eating.

Because there was no significant difference in disordered eating between the years in college, types of stressors are likely not to affect disordered eating. Although students experience different types of stress throughout college, (for example, finding classes and meeting new friends as a freshmen compared to finding a job or applying to graduate school as a senior), the results of this research indicate that the type of stress that students are experiencing does not affect disordered eating symptomology. The third hypothesis, low self-concept scores would correlate with higher disordered eating scores, was supported by this study. This is in accordance with other similar research studies (Heesacker et al., 2000; Hesse-Biber & Marino, 1991). Self-concept and body image were highly correlated with one another. However, the moderate correlation between self-concept and disordered eating would suggest that it alone cannot discriminate between students with and without disordered eating. Further research should investigate typical self-concept ratings for students to determine whether it is a relevant scale to predict disordered eating behavior.

Limitations

Because this study was completed at a small, Midwestern university, the sample may not be representative of all universities or of all young adults. In addition, because this was a cross-sectional sample rather than a longitudinal study, results on some variables may be different in a longitudinal sample. Another possible limitation could be the environment at the time of data collection. Many of the participants were eating or about to eat, which could have affected the answers. Finally, a better scale of actual stressors the participants encounter may be generated to more precisely quantify commitments.

References


