ANOREXIC EATING ATTITUDES AND BEHAVIORS OF MALE AND FEMALE COLLEGE STUDENTS

Wendy L. Nelson, Honore M. Hughes, Barry Katz, and H. Russell Searight

ABSTRACT

This study examined gender differences in eating attitudes and behaviors in a sample of 471 undergraduate college students. The prevalence of symptomatology indicative of anorexia was determined using the Eating Attitudes Test (EAT-26). In addition, the family climate, parent-child dynamics, and self-concept of students with and without maladaptive eating attitudes and behaviors were compared, and the relationship between eating attitudes/behaviors and current psychological distress was examined. Anorexic symptomatology was found for 20% of the females and 10% of the males. In general, students without symptomatic attitudes and behaviors had a more positive self-concept and reported less psychological distress than did those with eating disturbances. The findings suggest that eating problems may be more prevalent among males than previously estimated.

It is generally agreed that eating disorders among adolescent and young adult females are on the rise in the U.S. and other westernized nations (Mitchell & Eckert, 1987; Shisslak, Crago, Neal, & Swain, 1987). Prevalence studies of eating disorders among high school and college students (Crisp, Palmer, & Kalucy, 1976; Kurtzman, Yager, Landsverk, Wiesmeier, & Bodurka, 1989; Pope, Hudson, Yurgelun-Todd, & Hudson, 1984; Smead & Richert, 1990; Stangier, & Printz, 1980) and incidence studies of anorexia nervosa (Kendell, Hall, Hailey, & Babigian, 1973; Willi & Grossman, 1983) have lent support to this contention. Vandereycken and Meerman (1984), reviewing epi-
demiologic studies of anorexia nervosa conducted in the U.S., Europe, and South Africa, concluded that regardless of differences in methodology, diagnostic criteria, and sample composition, findings support the notion that eating disorders have reached epidemic proportions, at least among certain groups of female adolescents.

Intrapsychic conflict (Bruch, 1962, 1978; Swift & Stern, 1983), self deficits (Geist, 1989), family dynamics (Minuchin, Rosman, & Baker, 1978; Selvini-Palazzoli & Viaro, 1988; Strober & Humphrey, 1987), sociocultural norms (Nasser, 1988; Orbach, 1985; Schwartz, Thompson, & Johnson, 1982), sexual trauma (Calam & Slade, 1989; Connors & Morse, 1993; Sloan & Leichner, 1986), and biological and genetic factors (Morley & Blundell, 1988; Scott, 1986) have been implicated in the pathogenesis of anorexia nervosa. Thompson and Schwartz (1982) observed a positive linear relationship between psychiatric disturbance, as measured by the Symptom Checklist 90, and level of eating disturbance. It should be noted that while anorexia nervosa among males has not been entirely ignored (Andersen, 1990; Bruch, 1973; Fichter & Daser, 1987; Fichter, Daser, & Postpischil, 1985; Herzog, Bradburn, & Newman, 1990), the vast majority of the literature deals with females.

The present study examined gender differences in eating attitudes and behaviors in a college population. The goals were to document the prevalence of symptoms indicative of anorexia; to compare the family climate, parent-child dynamics, and self-concept of students with and without maladaptive eating attitudes and behaviors; and to examine the relationship between eating attitudes/behaviors and present psychological distress.

METHOD

Subjects

Four hundred seventy-one students (333 females and 138 males) were recruited from undergraduate psychology classes at two Midwestern liberal arts colleges located in the same metropolitan area. Participants ranged in age from 17 to 24 years. Eighty-three percent of the females and 77% of the males were white (non-Hispanic). Fifty-seven percent of the females and 68% of the males identified themselves as Catholic, 29% of the females and 17% of the males belonged to another Christian denomination, and the remainder indicated that they had another or no religious affiliation. Nearly three-fourths of the students were from families in which the biological or adoptive parents lived together.

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Materials

Eating attitudes and behaviors were assessed using the abbreviated version of the Eating Attitudes Test (EAT-26; Garner & Garfinkel, 1979; Garner, Olmsted, Bohr, & Garfinkel, 1982), which is a self-report measure of anorexic symptomatology. This instrument has been used to study eating disorders in North America and Europe (Steinhausen, 1985; Williams, Schaefer, Shisslak, Gronwaldt, & Comerci, 1986).

Family climate was assessed using the 90-item (true-false) Family Environment Scale (FES; Moos & Moos, 1986). According to Kleinman, Handal, Enos, Searight, and Ross (1989), the FES is "the most widely accepted measure of family climate." It comprises ten subscales—Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, Moral-Religious Emphasis, Organization, and Control—which tap family interaction, personal growth, and system maintenance.

Parent-child relationships were assessed using the abbreviated version of the Children's Report of Parent Behavior Inventory (CRPBI-30; Schudermann & Schudermann, 1988). The CRPBI-30 measures three dimensions of parenting (for mother and father individually): psychological control/psychological autonomy, acceptance/rejection, and firm control/lax control.

Self-concept was assessed using the 100-item Tennessee Self-Concept Scale (TSCS; Roid & Fitts, 1989). The following TSCS subscales were used in the present study: Physical Self, which assesses perception of one's physical appearance; Moral-Ethical Self, which assesses the degree to which an individual considers himself or herself a moral person; Personal Self, which assesses one's feelings of personal adequacy; Family Self, which assesses perceived value as a family member; Social Self, which assesses perceived adequacy in social relationships; and Behavior, which assesses perception of one's conduct in everyday life.

Psychological distress was assessed using the Global Severity Index (GSI) of the Brief Symptom Inventory (BSI; Derogatis & Spencer, 1982), an abbreviated version of the Symptom Checklist 90–Revised (a self-report inventory of current psychiatric symptoms). The GSI, which is derived by averaging scores on the 53 BSI items, is considered a highly sensitive indicator of overall level of distress. Because Derogatis and Spencer did not establish college student norms for the BSI, norms developed by Cochran and Hale (1985) were used for the present study.
Procedure

Students recruited from undergraduate psychology classes anonymously completed the EAT-26, FES, CRPBI-30, TSCS, BSI, and a brief demographic questionnaire. Informed consent was obtained.

Data were analyzed separately by gender. Based on EAT-26 scores, males and females were divided into three groups of approximately equal size.

The upper third of the female distribution of EAT-26 results comprised 107 students (33%) who had scores greater than or equal to 13. These females were considered problem eaters in that they demonstrated the greatest preoccupation with food and eating issues. The 118 females (35%) who obtained EAT-26 scores of 4 or below fell into the lower third of the distribution. These females were considered nonproblem eaters in that they demonstrated the least preoccupation with food and eating issues. Females who scored between 4 and 13 made up the middle third of the distribution and were excluded from the analysis.

Within the male sample, the upper third of the distribution of EAT-26 results included 44 students (32%) who had scores greater than or equal to 8. They were classified as problem eaters. The 45 males (33%) who obtained EAT-26 scores of 2 or below fell into the lower third of the distribution. They were classified as nonproblem eaters. Males who scored between 2 and 8 were excluded from the analysis.

This technique—dividing a sample and comparing extreme groups—is a common practice. For example, it has been used in item analysis (Anastasi, 1988).

RESULTS

Females

Twenty percent of the females met or exceeded the cutoff score for disturbed eating (i.e., EAT-26 score greater than or equal to 20) established by Garner et al. (1982). EAT-26 scores ranged from 0 to 61 (M = 11.3, SD = 11.1).

Using one-way multivariate analysis of variance (MANOVA), problem eaters were compared with nonproblem eaters on self-concept and psychological distress. The dependent measures were the six TSCS subscales and the GSI score. Because the results of the MANOVA were significant—Wilks’s lambda = .796; F(7, 217) = 7.958, p < .001—a follow-up discriminant function analysis was performed (see Table 1). As expected, the nonproblem eaters scored higher than the problem

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Table 1

Discriminant Function Analysis of Self-Concept and Psychological Distress Scores for Female Problem and Nonproblem Eaters

<table>
<thead>
<tr>
<th>Variables</th>
<th>Structure Coefficient</th>
<th>Problem M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>p-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Self</td>
<td>-0.71</td>
<td>60.4</td>
<td>7.8</td>
<td>66.1</td>
<td>8.1</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>GSI Score</td>
<td>0.54</td>
<td>1.1</td>
<td>0.6</td>
<td>0.8</td>
<td>0.6</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Personal Self</td>
<td>-0.51</td>
<td>62.8</td>
<td>8.0</td>
<td>67.1</td>
<td>8.6</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Moral-Ethical Self</td>
<td>-0.34</td>
<td>67.9</td>
<td>8.2</td>
<td>70.6</td>
<td>7.6</td>
<td>p = .01</td>
</tr>
<tr>
<td>Behavior</td>
<td>-0.25</td>
<td>112.6</td>
<td>11.2</td>
<td>115.5</td>
<td>11.5</td>
<td>p = .06</td>
</tr>
<tr>
<td>Family Self</td>
<td>-0.19</td>
<td>66.3</td>
<td>9.0</td>
<td>68.1</td>
<td>8.5</td>
<td>p = .14</td>
</tr>
<tr>
<td>Social Self</td>
<td>-0.10</td>
<td>67.5</td>
<td>8.8</td>
<td>68.3</td>
<td>7.7</td>
<td>p = .44</td>
</tr>
</tbody>
</table>

Canonical Correlation = 0.452
Chi-square = 50.16, df = 7, p < .01
Wilks’s Lambda = 0.796
Eigenvalue = 0.257

Note. Lower GSI scores indicate fewer reported psychiatric symptoms.

eaters on all of the TSCS subscales, suggesting that, in general, the nonproblem eaters viewed themselves more positively. It should be noted that not all differences were statistically significant. While the nonproblem eaters scored significantly higher on the Physical Self (p < .01), Personal Self (p < .01), and Moral-Ethical Self (p < .01) subscales, and marginally higher on the Behavior subscale (p = .06), they did not score significantly higher on the Family Self (p = .14) and Social Self (p = .44) subscales. Also as expected, the nonproblem eaters reported significantly less psychological distress (p < .01) than did the problem eaters, as demonstrated by their lower mean GSI score.

Group centroids for the problem and nonproblem eaters were 0.53 and −0.48, respectively, indicating that the problem eaters had poorer self-image than did the nonproblem eaters. On the basis of the discriminant function, 71.6% of the females were correctly classified as nonproblem or problem eaters (see Table 2).

The remaining analyses focused on the relationship between family dynamics and eating attitudes/behaviors. Problem eaters were com-
Table 2  
Actual Versus Predicted Eating Attitudes and Behaviors of Females

<table>
<thead>
<tr>
<th>Actual Attitudes and Behaviors</th>
<th>Predicted Attitudes and Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Problem (%)</td>
</tr>
<tr>
<td>Problem</td>
<td>71 (66.4)</td>
</tr>
<tr>
<td>Nonproblem</td>
<td>28 (23.7)</td>
</tr>
</tbody>
</table>

pared with nonproblem eaters using one-way MANOVA. The dependent measures were the FES and CRPBI-30 subscales. Because the results of the MANOVA were not significant—Wilks’s lambda = .889; F(16, 191) = 1.493, p > .05—a follow-up discriminant function analysis was not performed.

Stepwise multiple regression analysis employing the FES and the CRPBI-30 subscales indicated that the only independent variable to significantly contribute to the prediction of EAT-26 scores was Achievement Orientation (r = .14, p = .02). However, Achievement Orientation accounted for only 2% of the variance.

To examine the relationship between eating attitudes/behaviors and level of current psychological distress, GSI raw scores (ranging from 0.02 to 3.17) were correlated with EAT-26 scores. The scores were slightly correlated (r = .27, p < .01), suggesting that problematic eating is associated with other forms of psychological distress. Using Cochran and Hale’s (1985) female college student norms (GSI M = 0.71, SD = 0.42), approximately 27% of the entire sample of females scored at least one standard deviation above the GSI mean, and approximately 13% scored at least two standard deviations above the mean. Among the problem eaters, 43% scored at least one standard deviation above the mean, and 21% scored at least two standard deviations above the mean.

The EAT-26 responses of the female problem eaters were examined separately. The most highly endorsed items (i.e., the respondent indicated “often,” “very often,” or “always”) were as follows: 92% indicated that they were terrified about being overweight; 90% reported that they were preoccupied with a desire to be thinner; 86% indicated that they thought about burning calories when they exercised; and 83% indicated that they were preoccupied with the thought of fat on their bodies. Less frequently endorsed were the following statements: “I en-
gage in dieting behavior" (74%); “I feel uncomfortable after eating sweets” (71%); “I am aware of the calorie content of foods” (68%); “I give too much time and thought to food” (57%); “I feel guilty after eating” (54%); “I have self-control around food” (53%); and “I eat diet foods” (51%). The least frequently endorsed item was: “I vomit after I’ve eaten.” However, 20% indicated that they often, very often, or always had the impulse to vomit after meals. In addition, nearly 18% indicated that they often, very often, or always went on binges where they felt they might not be able to stop eating. Although purging after eating was uncommon, serious concern about purging and binging was expressed by one-fifth of this high-scoring group.

Males

Ten percent of the males met or exceeded the EAT-26 cutoff score for disturbed eating (20 or above). Scores ranged from 0 to 32 ($M = 7.0$, $SD = 7.3$).

A MANOVA examining self-concept (TSCS subscales) and psychological distress (GSI score) as they relate to eating attitudes/behaviors was statistically significant—Wilks’s lambda = .752; $F(7, 81) = 3.822$, $p < .01$. The results of the follow-up discriminant function analysis were consistent with the findings for females: nonproblem eaters scored higher than problem eaters on all of the TSCS subscales, and reported less psychological distress (see Table 3). The differences between the nonproblem and problem eaters were statistically significant ($p < .05$) for all but the Social Self subscale, which was borderline ($p = .06$). In general, the nonproblem eaters had a more positive perception of themselves than did the problem eaters.

Group centroids for the problem and nonproblem eaters were 0.57 and −0.56, respectively, indicating that the problem eaters were more psychologically distressed than were the nonproblem eaters. On the basis of the discriminant function, 70.8% of the males were correctly classified as nonproblem or problem eaters (see Table 4).

The MANOVA comparing nonproblem and problem eaters on measures of family climate and parent-child relations was not significant—Wilks’s lambda = .781; $F(16, 69) = 1.211$, $p > .05$. Thus, a follow-up discriminant function analysis was not performed.

Stepwise multiple regression analysis employing the FES and the CRPBI-30 subscales found that only Mother Psychological Control ($r = .26$, $p = .002$) and Father Psychological Control ($r = .28$, $p = .002$) were significantly correlated with the EAT-26 score. However, Father Psychological Control was the only variable to significantly contribute to the prediction of the EAT-26 score, accounting for a modest 8% of the variance. The remaining variables did not add significantly to the model.
Table 3

Discriminant Function Analysis of Self-Concept and Psychological Distress Scores for Male Problem and Nonproblem Eaters

<table>
<thead>
<tr>
<th>Variables</th>
<th>Structure Coefficient</th>
<th>Problem M</th>
<th>SD</th>
<th>Nonproblem M</th>
<th>SD</th>
<th>F-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSI Score</td>
<td>0.85</td>
<td>1.3</td>
<td>0.7</td>
<td>0.7</td>
<td>0.5</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Personal Self</td>
<td>-0.57</td>
<td>60.6</td>
<td>9.3</td>
<td>65.9</td>
<td>6.8</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Moral-Ethical Self</td>
<td>-0.51</td>
<td>62.5</td>
<td>9.0</td>
<td>67.2</td>
<td>7.3</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Physical Self</td>
<td>-0.47</td>
<td>61.5</td>
<td>9.2</td>
<td>66.2</td>
<td>8.3</td>
<td>p &lt; .05</td>
</tr>
<tr>
<td>Behavior</td>
<td>-0.42</td>
<td>107.8</td>
<td>11.6</td>
<td>112.7</td>
<td>8.5</td>
<td>p &lt; .05</td>
</tr>
<tr>
<td>Family Self</td>
<td>-0.37</td>
<td>82.8</td>
<td>8.8</td>
<td>66.3</td>
<td>7.2</td>
<td>p &lt; .05</td>
</tr>
<tr>
<td>Social Self</td>
<td>-0.35</td>
<td>61.3</td>
<td>9.6</td>
<td>64.9</td>
<td>8.0</td>
<td>p = .06</td>
</tr>
</tbody>
</table>

Canonical Correlation=0.498  
Chi-square=23.83, df=7, p < .01  
Wiik's Lambda=0.752  
Eigenvalue=0.330

Note. Lower GSI scores indicate fewer reported psychiatric symptoms.

Table 4

Actual Versus Predicted Eating Attitudes and Behaviors of Males

<table>
<thead>
<tr>
<th>Actual Attitudes and Behaviors</th>
<th>Predicted Attitudes and Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem (%)</td>
<td>Nonproblem (%)</td>
</tr>
<tr>
<td>Problem</td>
<td>27 (61.4)</td>
</tr>
<tr>
<td>Nonproblem</td>
<td>9 (20.0)</td>
</tr>
</tbody>
</table>

In regard to the relationship between eating attitudes/behaviors and level of current psychological distress, GSI raw scores (ranging from 0.02 to 3.02) were moderately correlated with EAT-26 scores (r = .37, p < .01), suggesting that problematic eating is associated with other forms of psychological distress. Using Cochran and Hale's (1985) male
college student norms (GSI $M = 0.84$, $SD = 0.55$), approximately 25% of the total sample of males scored at least one standard deviation above the GSI mean, and approximately 10% scored at least two standard deviations above the mean. Among the problem eaters, 36% scored at least one standard deviation above the mean, and 18% scored at least two standard deviations above the mean.

The EAT-26 responses of the male problem eaters were examined separately. The most highly endorsed items were as follows: 66% indicated that they were terrified about being overweight; 61% reported that they thought about burning calories when they exercised; and 59% indicated that they were preoccupied with the thought of fat on their bodies. The least frequently endorsed items pertained to purging behaviors. Three males (7%) indicated that they often, very often, or always vomited after eating, and five males (11%) indicated that they often, very often, or always had the impulse to vomit after meals. As with the females, the male high-scoring group seemed most concerned about body fat and being overweight.

DISCUSSION

The results of this study support the generally held belief that anorexic-like attitudes and behaviors are common among college females. Twenty percent of the surveyed females had EAT-26 scores indicative of anorexic symptomatology (20 or above, according to Garner et al., 1982). In addition, the finding that 10% of the males also had symptomatic EAT-26 scores suggests that anorexic attitudes and behaviors may be more prevalent in this population than previously thought. This estimate of anorexic-like eating disturbances among males seems particularly high given that the sample was not obtained from groups traditionally believed to be at increased risk for eating disorders, such as dance students and athletes.

In a similar study investigating an undergraduate population at a Midwestern university, Smead and Richert (1990) found that only 9% of the females and 1% of the males met Garner et al.'s (1982) EAT cutoff score for anorexic symptomatology. It is unclear as to what might account for this difference in findings.

It should be pointed out that individuals who reach or exceed the EAT-26 cutoff score (20) may have disturbed eating attitudes and behaviors, but not necessarily clinical anorexia nervosa. Garner et al. (1982) noted that "while most individuals from these nonclinical groups who score highly on the EAT do not satisfy the diagnostic crite-
ria for anorexia nervosa, the majority have been identified (in personal interviews) as experiencing abnormal eating patterns which interfere with normal psychological functioning” (p. 877).

Caution should be exercised in generalizing from the present data. Follow-up interviews to verify whether the high-scoring college students had a clinical eating disorder were not conducted. Further, because the high-scoring groups contained some individuals who had relatively minor degrees of eating disturbance, reported differences between groups may be conservative.

Nevertheless, on the basis of the discriminant function and multiple regression analyses, a picture emerges of the female problem eater: she has low physical and personal self-esteem and current psychological distress. Low physical self-esteem involves a negative perception of one's appearance, physical competence, and sexuality, while low personal self-esteem involves a diminished view of one's self-worth and personal competence.

Interestingly, Achievement Orientation, which accounted for only a small portion of the variance in EAT-26 scores, was the only family/relationship variable that distinguished female problem eaters from nonproblem eaters. The Achievement Orientation subscale reflects "the extent to which activities (such as school and work) are cast into an achievement-oriented or competitive framework" (Moos & Moos, 1986). The present finding is thus consistent with Bruch's (1962) observations of anorexics and their families. According to Bruch, not only were anorexics remarkable for their academic achievements, but "great things were expected of them, for example, improving the family fortune, making up for the parents' frustrations, or compensating for a disappointing or troublesome sibling" (p. 192). Bruch further noted that the mothers often "were women of achievement, or career women frustrated in their aspirations" and that the fathers "were enormously preoccupied with outer appearances... and measurable achievements" (p. 192).

The male problem eater presents a somewhat different picture. Whereas female problem eaters were characterized by lack of acceptance of their bodies and poor personal self-esteem, current psychological distress most strongly discriminated male problem eaters.

In contrast to the females, for males the single family relationship variable that significantly contributed to the prediction of the EAT-26 score was Father Psychological Control. This is consistent with previous findings. Regarding parental relationships, Fichter and Daser (1987) compared 42 anorexic males with 23 anorexic females and found that, while the two groups had quite similar clinical presentations,
there were notable psychosexual differences. The male anorexics had impaired father identification, as well as impaired "assimilation of male attributes and roles" (p. 415). Mother-son relationships tended to be very close, while father-son relationships tended to be distant. In fact, the authors noted that more of the anorexic males' fathers were physically separated from their sons or deceased, as compared with the fathers of the anorexic females. Close mother-son and distant father-son relationships were also noted by Kearney-Cooke and Steichen-Asch (1990).

CONCLUSION

The results of this study suggest that maladaptive eating attitudes and behaviors are not just the domain of young women. A relatively large proportion of the surveyed males also endorsed anorexic-like attitudes and behaviors. However, it would be useful to survey a larger number of males to see if the present results could be replicated. A larger male sample would also enable subgroups, such as competitive athletes, to be examined.

It should be noted that the EAT was developed primarily using female anorexia nervosa patients and normal controls (Garner & Garfinkel, 1979; Garner et al., 1982). A small sample of male normal controls was employed in cross-validation research (Garner & Garfinkel, 1979), but no eating-disordered males were studied. Since the present study suggests that disturbed eating attitudes and behaviors may be more prevalent among males than previously thought, it might be of value to develop EAT norms, as well as more sensitive screening techniques, for males.

REFERENCES


