

Body Weight, Dieting, and Eating Disorder Symptoms Among College Students, 1982 to 1992

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Objective: The authors sought to examine changes in prevalence of dieting behavior and eating disorder symptoms from 1982 to 1992. **Method:** In 1982, 625 women and 276 men participated in a study examining body weight, eating habits, dieting tendencies, and eating disorder symptoms. Ten years later 564 women and 235 men at the same college completed a nearly identical survey. Similar random sampling methods were used for both studies. All respondents were classified into one of five groups (nondieter, dieter, problem dieter, subclinical eating disorder, or eating disorder according to DSM-III-R criteria). **Results:** On almost all measures there were significant reductions of problematic eating behaviors and disordered attitudes about body, weight, and shape from 1982 to 1992. The estimated prevalence of bulimia nervosa dropped from 7.2% to 5.1% for women and from 1.1% to 0.4% for men. Binge eating, vomiting, diuretic use, and diet pill use also declined for women during this period. Significantly fewer women and men reported chronic dieting in 1992 than in 1982, and there was evidence of improved body image for both sexes. Subjects in 1992 also reported healthier eating habits in terms of dietary intake and meal regularity. Finally, women in 1992 were more likely to be overweight and were, on average, five pounds heavier than their 1982 counterparts. **Conclusions:** The prevalence of problematic eating behaviors and eating disorder symptoms appears to be abating. However, they remain a significant problem that affects a substantial segment of this population.

(Am J Psychiatry 1995; 152:1623-1629)

Although eating disorders were thought to be relatively rare before the 1970s, the prevalence of eating disorders increased greatly by the early 1980s (1). What is not clear, however, is whether there has been any change in the prevalence of eating problems since that time. Many early reports of eating disorder symptoms (such as binge eating) varied widely, with estimates ranging from 5% to 90% of young adult women (1). Similarly, bulimia nervosa—the most frequently assessed eating disorder—was estimated to affect 8%–19% of all university women (2, 3). Many of these early studies were flawed in important ways, especially in terms of definitional criteria and sampling methodology (4, 5). Later studies, using more stringent criteria

and better sampling methods, indicate that the prevalence of bulimia among young women is less than 5% and probably closer to 1%–2% (6, 7). Given the shift in methods to assess eating disorder symptoms and cases, it is difficult to establish whether the prevalence has increased or decreased over the past decade.

Epidemiological reviews of the eating disorders literature have identified a number of serious problems with determining changes in the prevalence of eating disorders (4, 5, 8). For instance, many of the survey questions used in prevalence studies were idiosyncratic, precluding straightforward comparisons among the studies. Moreover, there was a general shift toward greater sophistication in the ways that eating disorder symptoms were defined. The most consequential change was the shift from DSM-III to DSM-III-R criteria for bulimia nervosa, which occurred because the DSM-III criteria were thought to be overly inclusive. The DSM-III-R criteria established a minimum number of weekly binge eating episodes and emphasized that self-control difficulties and an overconcern with body weight and shape were at the heart of the disorder. Thus, an important possible reason for the wide range of prevalence rates may be the different criteria

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Supported in part by the Milton Fund of Harvard Medical School and the Radcliffe College Research Fund.

The authors thank the Henry Murray Center of Radcliffe College for providing access to the data from the 1982 sample and the Registrar's Office of Harvard University for assistance in randomly selecting the 1992 sample.

used in the studies. According to this reasoning, recent studies (which have tended to use more sophisticated methods) may lead researchers to conclude, perhaps erroneously, that eating disorders have diminished over the past few years. Moreover, even if there has been a decrease in the prevalence of eating disorders, the extent of the decline would be masked by definitional discrepancies among studies.

Prevalence rates may also vary between studies because researchers used very dissimilar samples. Several diverse groups of subjects, ranging from junior high school to college to community to psychiatric patient samples, have participated in the different studies (4, 5). Sampling methods are important because some groups are at greater risk than others for developing eating disorders. For instance, community samples of older adults have much lower rates of eating disorders than students in prestigious colleges (9). Moreover, important subject variables such as socioeconomic status, geographical location, and ethnic representation are often ignored in cross-sectional comparisons (5). The sampling methods themselves have also been called into question (4, 8). For instance, few studies have used random sampling, and there has been little attention paid to differences in response rate across samples. The current study sought to address many of the concerns raised by reviewers of the epidemiological literature.

Fairburn and Beglin (4) also noted that the extant literature on epidemiology has focused almost exclusively on clinical cases of bulimia nervosa while largely ignoring a full spectrum of disturbed eating behaviors. An understanding of the epidemiology of the full range of problematic behaviors is important because research has demonstrated that individuals who have some eating problems (but who fall short of having a clinical disorder) are especially at risk for the development of clinical eating disorders (10). The current study examined a wide range of eating problems in order to determine whether there have been changes in nonclinical symptoms.

A subsidiary goal of the study was to examine body weight changes over the same period. Epidemiological evidence has suggested that there is an increasing prevalence of overweight among American adults (11). This trend is especially prevalent among some racial groups and may be mediated by educational and socioeconomic factors (12). For instance, lower educational attainment is a strong determinant of weight gain for both men and women (12). The current study examined changes in body weight and percent overweight among students at a selective college.

This article describes an examination of changes in eating patterns over 10 years at a single site. Randomly selected samples of students were administered a similarly worded questionnaire in 1982 and 1992. We included both men and women who were in their freshman or senior year. We examined a variety of behaviors, including meal patterns, dieting intensity and strategies, purging, binge eating, and exercising. We also examined a number of attitudes about body shape and weight,

including a subset of items from the Eating Disorders Inventory (13). Finally, we assessed self-reports of body weight and body weight changes.

METHOD

In the spring of 1982, researchers affiliated with Radcliffe College surveyed a randomly selected group of 800 women and 400 men from a selective northeastern university. Half of the respondents were freshmen and half were seniors. Participants were mailed a confidential, in-depth survey of eating habits and were asked to return it to the researchers. The response rates were 78% for women and 69% for men. The questionnaire included items about demographic background; height and weight; general eating patterns; concerns about dieting, body weight, and shape; specific symptoms of eating disorders (binge eating, vomiting, laxative and diuretic use, and fasting). Subjects indicated whether they had engaged in these behaviors in the past (but not currently) or whether the behaviors were ongoing. Respondents were asked to specify the frequency of current binge eating (for those who were regularly binge eating), as well as how much control they had over the binges and how troubled or worried they were by the binges. They were also asked about the type of food that they consumed during a typical binge. Subjects completed 26 items from Eating Disorder Inventory (13). These items are the principal items for five of the inventory's subscales (drive for thinness, bulimia, maturity fears, perfectionism, and interpersonal distrust). Results from this study indicated that the prevalence of eating disorders in this sample was very similar to that reported in other studies of college students (14).

In the spring of 1992 a new group of 1,200 students was surveyed at the same college, following the same procedures as those used in the 1982 study. Eight hundred women and four hundred men (half freshmen and half seniors) were randomly selected and mailed a survey about eating behavior. The response rate in 1992 was 71% for women and 59% for men. The items in the 1992 questionnaire were closely based on those from 1982, with the addition of items about exercise and more questions about dieting methods. Binge eating and other symptoms of eating disorders were assessed in an identical manner, and the same 26 items of the Eating Disorder Inventory were included. Written informed consent was received from all subjects in both the 1982 and 1992 samples.

Body mass index (calculated as weight in kilograms divided by height in meters squared) was calculated for each subject. Subjects were classified as very underweight, underweight, average weight, overweight, or obese on the basis of standards from the National Health and Nutrition Examination Survey (12). Body mass index cutoffs for overweight were 27.8 for men and 27.3 for women, and body mass index cutoffs for obesity were 31.1 for men and 32.3 for women. These values are based on the 85% values for men and women aged 20-29 years (11). The subjects in the current study had a mean age of 19.9 years ($SD=1.8$). There were no age differences between the two samples (t values <1).

All subjects from 1982 and 1992 were classified into one of five groups: nondieters, dieters, problem dieters, subclinical eating disorder, and eating disorder. Classifications were made by raters blind to year of subject participation. We used DSM-III-R criteria for bulimia nervosa to classify subjects into the eating disorder category. The criteria for an eating disorder were as follows: binge eating twice or more per week, as well as regular purging (typically vomiting or fasting); feeling out of control during a binge (score of 4 or 5 on a 5-point scale) and being extremely worried about the binge eating (score of 4 or 5 on a 5-point scale); being in the top 25th percentile for the Eating Disorder Inventory measures of drive for thinness and bulimia; dieting often; and being dissatisfied with one's current appearance and wanting to lose weight. The last three measures helped identify a preoccupation with dieting and physical appearance. Subjects classified as having subclinical eating disorders were those who reported regular binge eating (at least once a week), at least moderate worry about their binge eating, and being somewhat out of control during a binge but who did not meet one or more of the criteria for an eating disorder.

der. Most often, these individuals reported binge eating only once per week or did not report regular use of purgatives. Problem dieters were those who reported dieting sometimes or often, scored above the median on Eating Disorder Inventory measures of drive for thinness and bulimia, and reported some symptoms of an eating disorder (most commonly binge eating). However, these subjects did not report feeling out of control during a binge and did not report being overly worried about their binge eating. Dieters were those who reported dieting sometimes or often and who also reported body dissatisfaction but minor or no symptoms of eating disorders. Nondieters were those who reported dieting rarely or never and who reported no symptoms of eating disorders. We followed the conservative strategy of moving subjects to a lesser eating disorder category if there were any questions about classification.

We used chi-square analyses to examine changes in the percentage of men and women who reported various eating behaviors. For continuous measures we used two-tailed t tests. The data were analyzed separately for men and women because they differed greatly on all measures in the study and because the comparisons of interest were within sex group. We collapsed the data across seniors and freshmen (for each of 1982 and 1992) both for the sake of brevity and because differences between them (the few that existed) were not of empirical interest.

RESULTS

The respondents in 1982 and 1992 were similar in most respects. The 1992 sample, which was 73.7% Caucasian, 5.4% African American, 15.2% Asian American, and 5.7% Hispanic, was slightly more diverse than the 1982 sample, which was 81.9% Caucasian, 6.0% African American, 8.0% Asian American, and 4.1% Hispanic. This slight change in ethnic diversity did not affect the results, since the same patterns of results emerged for all groups. Both samples were equally likely to have come from two-parent families (82.2% in 1992 versus 78% in 1982); however, the 1992 subjects reported fewer siblings (mean=1.7, SD=1.3) than the 1982 sample (mean=2.3, SD=1.6) ($t=6.6$, $df=1336$, $p<0.0001$).

Body Weight

On average, women were 5 lb heavier in 1992 (mean=132.8 lb, SD=21.1) than they were in 1982 (mean=127.8, SD=17.6) ($t=4.42$, $df=1175$, $p<0.0001$) (table 1). Men in 1992 reported being slightly heavier (mean=162.7 lb, SD=26.7) than men in 1982 (mean=160.8, SD=21.6); however, this difference was not significant ($t=0.9$, $df=506$, $p>0.15$). These differences represented only a modest increase in body mass index for both men (22.6 to 23.2) and women (21.0 to 21.9). As expected, there were no height differences for either men or women between the 1982 and 1992 samples (t

TABLE 1. Population-Based Body Weight Categorizations, Self-Report Body Weight Categorizations, and Desires for Body Weight Change for Female and Male College Students in 1982 and 1992

Variable	Women				Men			
	1982 (N=625)		1992 (N=564)		1982 (N=276)		1992 (N=235)	
	N	%	N	%	N	%	N	%
Weight group ^a								
Average	607	97.1	530	94.0	266	96.4	220	93.6
Overweight	8	1.3	21	3.7	6	2.2	10	4.3
Obese	2	0.3	8	1.4	0	0.0	2	0.9
Self-categorization ^b								
Very underweight	1	0.2	4	0.7	1	0.4	1	0.4
Underweight	16	2.6	32	5.7	38	13.8	42	17.9
Average	293	46.9	350	62.1	199	72.1	163	69.4
Overweight	286	45.8	166	29.4	35	12.7	22	9.4
Very overweight	21	3.4	10	1.8	1	0.4	1	0.4
Desire for weight change ^c								
Lose weight	501	80.2	405	71.8	105	38.0	72	30.6
Stay same	99	15.8	136	24.1	104	37.7	98	41.7
Gain weight	21	3.4	23	4.1	64	23.2	65	27.7

^aSignificant difference for women ($\chi^2=11.8$, $df=2$, $p<0.003$).

^bSignificant difference for women ($\chi^2=45.5$, $df=4$, $p<0.0001$).

^cSignificant difference for women ($\chi^2=13.4$, $df=2$, $p<0.005$).

values <1). Average height for men was 70.7 inches (SD=2.6) in 1982 and 70.5 inches (SD=3.3) in 1992. Average height for women was 65.3 inches in both 1982 and 1992.

Our interest in examining weight changes was due in part to reports that more Americans are becoming overweight (11, 12). As may be seen in table 1, very few subjects in our sample were overweight or obese; however, there was a significant increase in the percentage of overweight women ($p<0.003$) and a slight, nonsignificant increase for men ($\chi^2=4.2$, $df=2$, $p<0.15$) from 1982 to 1992. However, these values are quite small compared to those of nationally representative samples, in which up to 20% of men and women in this age group are reported to be overweight (11). Nonetheless, many of these individuals, and especially women, saw themselves as overweight and wished to lose at least 10 lb.

Although the vast majority of women were average weight or underweight (compared to national representative samples), nearly half in 1982 and one-third in 1992 viewed themselves as overweight or very overweight (table 1). However, although women in 1992 were significantly heavier than their 1982 counterparts, they were much less likely to see themselves as overweight or very overweight ($p<0.0001$). Men in both 1982 and 1992 showed a slight bias toward describing themselves as overweight (in that very few of them were actually overweight), but there were no significant differences between them ($\chi^2=2.7$, $df=4$, $p>0.05$). A similar trend is observed when we examine desired weight change. Nearly 10% fewer women in 1992 than in 1982 reported a desire to lose at least 10 lb ($p<0.005$), although the vast majority of women in both years wanted to lose weight (and almost none wanted to gain

TABLE 2. Dieting Frequency, Types of Diets, and Meal Patterns Reported by Female and Male College Students in 1982 and 1992

Variable	Women				Men			
	1982 (N=625)		1992 (N=564)		1982 (N=276)		1992 (N=235)	
	N	%	N	%	N	%	N	%
Frequency of dieting ^a								
Never	128	20.5	156	27.7	151	54.7	163	69.4
Rarely	143	22.9	151	26.8	87	31.5	44	18.7
Sometimes	218	34.9	164	29.1	34	12.3	21	8.9
Often	136	21.8	91	16.1	4	1.4	7	3.0
Type of diets tried								
Low-fat ^b	87	13.9	316	56.0	20	7.2	54	23.0
Low-calorie	379	60.6	331	58.7	55	19.9	40	17.0
Low-carbohydrate ^c	153	24.5	50	8.9	27	9.8	8	3.4
High-protein ^d	82	13.1	22	3.9	12	4.3	10	4.3
Weight Watchers	41	6.6	50	8.9	1	0.4	3	1.3
Meals eaten								
Breakfast ^e								
Never	205	32.8	53	9.4	105	38.0	23	9.8
Sometimes	181	29.0	187	33.2	89	32.2	104	44.3
Daily	233	37.3	319	56.6	81	29.3	103	43.8
Lunch ^f								
Never	36	5.8	6	1.1	6	2.2	1	0.4
Sometimes	205	32.8	67	11.9	60	21.7	8	3.4
Daily	377	60.3	484	85.8	209	75.7	223	94.9
Dinner ^g								
Never	0	0.0	1	0.2	0	0.0	0	0.0
Sometimes	80	12.8	14	2.5	17	6.2	1	0.4
Daily	539	86.2	541	95.9	258	93.5	232	98.7

^aSignificant difference for women ($\chi^2=16.2$, $df=3$, $p<0.001$) and men ($\chi^2=15.3$, $df=3$, $p<0.005$).

^bSignificant difference for women ($\chi^2=234.6$, $df=1$, $p<0.0001$) and men ($\chi^2=25.4$, $df=1$, $p<0.0001$).

^cSignificant difference for women ($\chi^2=51.1$, $df=1$, $p<0.0001$) and men ($\chi^2=8.1$, $df=1$, $p<0.005$).

^dSignificant difference for women ($\chi^2=31.6$, $df=1$, $p<0.0001$).

^eSignificant difference for women ($\chi^2=114.3$, $df=3$, $p<0.0001$) and men ($\chi^2=65.7$, $df=3$, $p<0.0001$).

^fSignificant difference for women ($\chi^2=110.6$, $df=3$, $p<0.0001$) and men ($\chi^2=42.2$, $df=3$, $p<0.0001$).

^gSignificant difference for women ($\chi^2=45.9$, $df=3$, $p<0.0001$) and men ($\chi^2=12.3$, $df=3$, $p<0.0001$).

The types of diets also changed appreciably between 1982 and 1992 (table 2). In 1982, the most common diets were low-calorie or low-carbohydrate, whereas in 1992 there was a significant shift toward low-fat diets, both for men and women ($p<0.0001$). Low-calorie diets remained equally common in 1992 for men and women (χ^2 values <1), but the use of low-carbohydrate diets declined for both men ($p<0.005$) and women ($p<0.0001$). High-protein diets were uncommon for men in 1982 and 1992, and there was no significant change in the percentage who tried this method (χ^2 values <1). However, women were significantly less likely to use high-protein diets in 1992 than in 1982 ($p<0.0001$). Finally, the percentage of women who attended Weight Watchers increased only slightly in 1992 ($\chi^2=2.29$, $df=1$, $p<0.15$), whereas this method was uncommon for men both in 1982 and 1992. Thus, dieting declined from 1982 to 1992 in terms of both intensity and the number of different diets that people tried.

Subjects were asked to specify how often they ate breakfast, lunch, and dinner. As may be seen in table 2, students in 1992 were much more likely to eat three

meals per day than were students in 1982. For instance, in 1982 more than one-third of women and men reported never eating breakfast; this dropped to 10% or fewer by 1992 ($p<0.0001$). Skipping lunch was much less common than skipping breakfast for both men and women. However, there was a drop in the number who reported skipping lunch; whereas one in 15 women never ate lunch in 1982, only one in 100 never ate lunch in 1992 ($p<0.0001$). Even fewer men reported skipping lunch, although fewer did so in 1992 than in 1982 ($p<0.0001$). Similarly, although the vast majority of subjects ate dinner every day, both women and men more regularly consumed dinner in 1992 than in 1982 ($p<0.0001$). These data indicate that the eating habits of subjects in 1992 were much healthier than those of their counterparts in 1982. Students reported less intense dieting, more healthy diets (i.e., low fat rather than low carbohydrate), and more regular meals.

As is generally found, men were almost as likely to report wanting to gain weight as wanting to lose weight. Although fewer men in 1992 had a desire to lose weight, this drop was not significant ($\chi^2=3.5$, $df=2$, $p>0.05$). It should be noted that self-descriptions of weight status were related to body mass index scores, both for women ($r=0.56$, $df=1170$, $p<0.0001$) and for men ($r=0.54$, $df=496$, $p<0.0001$), which suggests that subjects might have been using local norms for determining comparable weight status. Nonetheless, these norms are far below societal averages for individuals in this age group, and the vast majority of those who described themselves as overweight did not meet medical criteria for overweight (12).

Dieting and Meal Patterns

Subjects were asked to indicate whether they never, rarely, sometimes, or often dieted. As may be seen in table 2, the intensity of dieting declined for both men ($p<0.005$) and women ($p<0.001$) from 1982 to 1992. The number of women dieting sometimes or often dropped by 10%, mainly because many more women reported never dieting. For men, 15% more reported never dieting in 1992 than in 1982.

Eating Disorder Symptoms

The 26 items of the Eating Disorder Inventory were used to examine psychological factors thought to be related to eating disorders. As may be seen in table 3, scores on the Eating Disorder Inventory subfactors changed only

slightly between 1982 and 1992. The most important change was the decline in bulimia scores for both women ($p < 0.0001$) and men ($p < 0.001$). The only other significant change was an increase in maturity fears for both women and men ($p < 0.0001$). Drive for thinness showed a slight, albeit nonsignificant, decrease for women ($t = 1.63$, $df = 1171$, $p < 0.10$) and very little change for men ($t = 1.05$, $df = 504$, $p > 0.10$). Women also showed very slight decreases in perfectionism ($t = 1.49$, $df = 1172$, $p < 0.15$) and interpersonal distrust ($t = 1.58$, $df = 1177$, $p < 0.15$), whereas there were virtually no differences for men on these factors (t values < 1).

Table 4 shows the frequency of subjects who reported past or current binge eating and purging behaviors. The majority of men and women reported never engaging in these behaviors. In 1982, nearly half of the women reported current or past binge eating, and 28% reported regular binge eating. Although binge eating was still relatively common among women in 1992, only one-quarter of women reported past or current binge eating; this was a significant decrease from 1982 ($p < 0.0001$). Men showed a similar decrease in past or current binge eating from 1982 to 1992 ($p < 0.005$). Although nearly 20% of men in 1982 reported past or current binge eating, fewer than 10% did so in 1992.

In terms of purgatives, there was also a general decline from 1982 to 1992. Diuretic, laxative, and diet pill use was relatively uncommon in this group in both surveys. Significant declines were found for women in diuretic use ($p < 0.05$) and diet pills ($p < 0.0001$), although there were no significant drops for men or changes in laxative use for men or women (all p values > 0.15). Fasting or severely restricting food intake was the most common method of purging for both men and women. However, fasting declined from 1982 to 1992 for both women ($p < 0.0005$) and men ($p < 0.01$). Finally, the prevalence of vomiting showed a more complex pattern. Overall, there was a slight decline in reported past or current vomiting for both women ($p < 0.07$) and men ($p < 0.05$), but the percentage who reported current vomiting actually showed a very slight increase. It should be noted that vomiting was quite rare for women and especially rare for men.

TABLE 3. Modified Eating Disorder Inventory Subscale Scores for Female and Male College Students in 1982 and 1992

Subscale	Score							
	Women				Men			
	1982 (N=625)		1992 (N=564)		1982 (N=276)		1992 (N=235)	
Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Drive for thinness	15.7	6.5	15.1	6.4	9.1	4.4	8.7	4.5
Bulimia ^a	14.2	5.1	12.7	5.0	10.5	3.4	9.5	3.3
Interpersonal distrust	12.3	4.0	12.7	4.5	13.2	4.0	13.4	4.2
Perfectionism	23.1	5.5	23.6	5.5	22.9	5.0	23.2	4.9
Maturity fears ^b	10.3	3.0	11.4	3.7	10.6	3.0	11.8	3.4

^aSignificant difference for women ($t = 5.11$, $df = 1178$, $p < 0.0001$) and men ($t = 3.34$, $df = 505$, $p < 0.001$).

^bSignificant difference for women ($t = 5.63$, $df = 1171$, $p < 0.0001$) and men ($t = 4.26$, $df = 501$, $p < 0.0001$).

TABLE 4. Eating Disorder Symptoms Reported by Female and Male College Students in 1982 and 1992

Symptom	Women				Men			
	1982 (N=625)		1992 (N=564)		1982 (N=276)		1992 (N=235)	
	N	%	N	%	N	%	N	%
Binge eating ^a								
Have tried	124	19.8	62	11.0	16	5.8	6	2.5
Now use regularly	176	28.2	107	19.0	39	14.1	14	6.0
Diuretics ^b								
Have tried	18	2.9	6	1.1	1	0.4	2	0.9
Now use regularly	10	1.6	5	0.9	1	0.4	0	0.0
Diet pills ^c								
Have tried	79	12.6	36	6.4	2	0.7	3	1.3
Now use regularly	22	3.5	8	1.4	2	0.7	0	0.0
Laxatives								
Have tried	28	4.5	15	2.7	0	0.0	1	0.4
Now use regularly	12	1.9	7	1.2	0	0.0	0	0.0
Fasting ^d								
Have tried	139	22.2	107	19.0	28	10.1	16	6.8
Now use regularly	122	19.5	70	12.4	24	8.7	7	3.0
Vomiting ^e								
Have tried	51	8.2	28	5.0	7	2.5	1	0.4
Now use regularly	12	1.9	15	2.7	0	0.0	3	1.3

^aSignificant difference for women ($\chi^2 = 41.3$, $df = 2$, $p < 0.0001$) and men ($\chi^2 = 13.2$, $df = 2$, $p < 0.005$).

^bSignificant difference for women ($\chi^2 = 6.3$, $df = 2$, $p < 0.05$).

^cSignificant difference for women ($\chi^2 = 19.5$, $df = 2$, $p < 0.0001$).

^dSignificant difference for women ($\chi^2 = 15.9$, $df = 2$, $p < 0.0005$) and men ($\chi^2 = 9.7$, $df = 2$, $p < 0.01$).

^eMarginal difference for women ($\chi^2 = 3.5$, $df = 2$, $p < 0.07$) and significant difference for men ($\chi^2 = 7.1$, $df = 2$, $p < 0.05$).

Subjects were classified into one of five groups in terms of eating pathology: nondieters, dieters, problem dieters, subclinical eating disorder, and eating disorder. Table 5 shows the percentage assigned to each group. In general, people were lower on this continuum in 1992 than in 1982. This pattern was significant for both women ($p < 0.0001$) and men ($p < 0.05$). We estimated the prevalence of bulimia nervosa to be 7.2% of the women in 1982 and 5.1% in 1992. Both of these values are slightly higher than those reported in other samples, although the overall distribution among the five groups is quite similar to that reported by other researchers (10). Bulimia nervosa was much less common among men: there were only three cases apparent

TABLE 5. Eating Disorder Classifications of Female and Male College Students in 1982 and 1992

Eating Disorder Category ^a	Women				Men			
	1982 (N=625)		1992 (N=564)		1982 (N=276)		1992 (N=235)	
	N	%	N	%	N	%	N	%
Nondieter	228	36.5	277	49.1	219	79.3	205	87.2
Dieter	159	25.4	168	29.8	26	9.4	21	8.9
Problem dieter	125	20.0	67	11.9	19	6.9	4	1.7
Subclinical eating disorder	68	10.9	23	4.1	9	3.3	4	1.7
Eating disorder	45	7.2	29	5.1	3	1.1	1	0.4

^aSee text for definitions of categories. Significant difference for women ($\chi^2=45.2$, $df=4$, $p<0.0001$) and men ($\chi^2=10.5$, $df=4$, $p<0.05$).

in 1982 and one case in 1992. It is interesting to note that the proportion of women who appeared to have any sort of eating problem dropped by almost 20% between 1982 and 1992.

DISCUSSION

The results of this study indicate that eating disorder symptoms have decreased significantly between 1982 and 1992, especially for women. We found that the estimated prevalence rate for bulimia nervosa among women dropped from 7.2% to 5.1%, and for men it dropped from 1.1% to 0.4%. Binge eating decreased by nearly 10% for both men and women, and fewer 1992 subjects reported any past binge eating behavior. The use of purgatives (such as diuretics, diet pills, and fasting) also showed a decline between 1982 and 1992, although laxative use and vomiting remained somewhat more stable at very low levels. Subjects in 1992 reported healthier eating habits, with regular meal consumption and diets favoring a reduction in fat rather than a preoccupation with calories. Fewer individuals reported frequent dieting, and there appeared to be an increase in self-acceptance of body weight.

The results of the current study are both encouraging and discouraging. Although the prevalence of various eating disorder symptoms significantly abated between 1982 and 1992, the levels remained quite high, and body dissatisfaction and desire to lose weight were still the norm for more than 70% of young women. One in 10 women in 1992 reported symptoms that would represent clinical or nearly clinical eating disorders. Although this rate has dropped nearly in half since 1982, a problem that affects such a large group of women necessitates continued research and treatment attention. We found that eating problems were much less common for men than for women (as is well-established), and only one of the men in 1992 appeared to have a genuine eating disorder. Hence, eating problems continue to be predominantly a woman's health concern.

It is interesting to note that self-perceptions of overweight declined at the same time that women became

heavier. On average, women in 1992 were 5 lb heavier than their 1982 counterparts. However, women in this sample were considerably thinner, on average, than women in the general population. Recent estimates suggest that more than 20% of women in their twenties are overweight. In this sample (which averaged 20 years old), less than 2% were overweight in 1982, and less than 5% were overweight in 1992. Indeed, one-third of the 1982 women and one-quarter of the 1992 women had body mass index scores that

were less than 20, the value below which one might be considered at risk for health problems (15). Thus, the modest weight gain among women in this sample does not represent an increase in the health risks associated with obesity.

The reason for the weight gain among women is not entirely clear. It is possible that the reduced dieting and purging has allowed more women to maintain a more healthy body weight. Alternatively, the increase in weight in this sample may reflect the general increase in weight among all Americans, which is presumably attributable to more sedentary lifestyles and lax eating habits. Conversely, it is also possible that women in this sample are engaging in rigorous exercise so that the increased weight represents muscle tissue rather than fat storage. We do not have the available data to examine change in exercise patterns, but there is currently little evidence that women have increased their levels of exercise more than have men, who did not have a significant increase in weight. Hence, it seems unlikely that the increased weight among women in 1992 can be attributed to increased exercise.

These data provide indirect support for the epidemiological findings that increases in overweight are occurring mainly among some groups, especially those with low educational attainment (12). Our sample of students from a selective college had not experienced the increase in overweight that has been reported for other groups of Americans. It is interesting to speculate whether the rarity of overweight among this sample is due to possible stigmas about obesity. It is well known that obesity is negatively related to income, especially for women. Moreover, early research indicated that overweight individuals may have more difficulty gaining admittance to college (16), and more recent research has found that parents of overweight children are less likely to pay for their college educations (even after socioeconomic status and parental weight are controlled) (17). Thus, the scarcity of overweight in this sample could represent a systematic bias against admittance of overweight students into selective colleges; this might explain in part the economic disadvantages of being overweight. Such possibilities are obviously grounds for future research.

The reasons for the decrease in symptoms of eating disorders are also unclear, although a number of possibilities are easily identified. For instance, there has been an increasing awareness of the potential consequences of fasting, binge eating, and purging. Vivid examples of celebrities dying or nearly dying from eating disorders are relatively common, and, along with media and public health advertisements, these may act to discourage dangerous dietary practices. Most college campuses now have specific resources (such as peer-group counseling) to assist students with problematic eating behaviors, and there has been an increasing emphasis on healthful eating and regular exercise. Thus, sociocultural messages about the importance of thinness, long blamed for cultivating eating disorders, may have changed over the last decade.

It is also possible that subjects were more reluctant to report eating problems in 1992 than they were in 1982. Eating disorder behaviors may be more stigmatized now than they were in the early 1980s, and, therefore, women may be hesitant to acknowledge an eating problem. Similarly, women in the 1990s may have a better understanding of the behaviors and terminology of eating disorders. For instance, there may be better agreement on what binge eating is, and fewer women may feel that their occasional bouts of overeating are pathological. Thus, not only might researchers be more precise in their definitions, but so may their subjects. However, we noted similar changes in behaviors that are easy to define (such as taking laxatives or diet pills). Thus, we are confident that our findings represent genuine change in behavior and not simply change in how subjects define the behavior.

A number of other potential limitations of this study need to be acknowledged. First, this study relied entirely on self-report data, and this method has been criticized as having greater potential for bias and inaccuracy. Fairburn and Beglin (4) emphasized that clinical interviews are necessary to determine the actual prevalence of eating disorders. Similarly, they argued for carefully defined items so that subjects and researchers share a common understanding of what is meant by the various terms. We were limited by the methods and items used in the 1982 study, and we needed to follow those methods as closely as possible in order to be sure that any differences between samples were not due to changes in item definition or in sampling methodology. Moreover, the response rate was slightly lower in 1992 than it was in 1982, and it is possible that those with symptoms of eating disorders were less likely to participate. However, the main drop in response rate occurred for men—the response rate for women decreased only slightly. Even given these limitations, to our knowledge, our data are the first to examine the prevalence of eating disorder pathology over such a long period. Future studies using interview data may allow us to carefully examine changes in eating disorder behavior.

This study set out to examine whether there had been any change in the prevalence of eating disorder behavior over the past decade. Our results indicate that the full range of eating pathology decreased somewhat between 1982 and 1992, especially for women. However, eating disorders remain a serious problem in this population, and although things may be getting better, there is still room for improvement. Future research is necessary to track potential changes in the prevalence of eating disorders, along with a more systematic examination of which factors are responsible for these changes.

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