

**Current Research**

# Weight Bias among Dietetics Students: Implications for Treatment Practices

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**ABSTRACT**

**Background** Several studies have examined attitudes about obesity among food and nutrition professionals, yielding mixed results, and no experimental research has tested the impact of dietitians' attitudes on their treatment practices or health evaluations with obese patients.

**Objective** This study investigated attitudes of dietetics students toward obese persons and tested whether a patient's body weight influences students' treatment decisions and health evaluations within a randomized experiment.

**Design** Between the months of September and December 2007, a convenience sample of 182 dietetics undergraduate students (92% women; mean age 23.1±5.4 years) from colleges throughout the United States completed online self-report surveys to assess weight bias (using the Fat Phobia Scale). Participants were also randomly assigned to read one of four mock health profiles of patients who varied only by weight-related characteristics (eg, obese or average weight) and sex (male or female), and asked to make judgments about the patient's health status and participation in treatment.

**Statistical analyses performed** To compare group data, multiple analysis of variance was used to test for an effect of the patient's body mass index on participants' health evaluations and their perceptions of patients in each of the four experimental conditions. Correlations were calculated between mean fat phobia scores and perceptions of patients.

**Results** Participants in all conditions expressed a moderate amount of fat phobia (mean=3.7), and students rated obese patients as being less likely to comply with treatment recommendations compared with nonobese patients ( $P<0.05$ ). Results from multivariate analysis of variance tests showed students also evaluated obese patients' diet quality and health status to be poorer than nonobese patients, despite equivalent nutritional and health information across weight categories for each sex in patient

profiles. In contrast, obese and nonobese patients were rated to be similarly motivated, receptive, and successful in treatment.

**Conclusion** Implications of these findings for education and intervention in dietetics training are discussed, with emphasis on increasing awareness of weight bias in existing dietetics curricula.

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**D**espite a cultural intolerance for bias based on sex, ethnicity, or race, bias toward overweight and obese individuals remains socially acceptable, and rarely challenged. Stigma and discrimination toward overweight youth and adults have been documented across multiple settings, including educational institutions, the workplace, and even in the home from family members (1,2).

Obese individuals are also vulnerable to weight bias from health care providers. An accumulation of research has demonstrated that overweight and obese patients are prone to weight bias from physicians, medical students, nurses, psychologists, physical education instructors, and even health professionals who specialize in obesity (3-11). Opinions documented in these self-report studies include stereotypes that obese patients are lazy, lacking in self-control, noncompliant, unsuccessful, unintelligent, and dishonest. These negative attitudes may have serious consequences for the clinical treatment and subsequent health outcomes of overweight and obese patients (12-16).

Registered dietitians are an especially important group of health care professionals to target with education and awareness about weight bias because of the frequency of their interactions with overweight and obese patients. Although this topic has received less attention in samples of nutrition professionals and students, several studies have demonstrated that dietitians are not immune to weight bias. McArthur and Ross (17) surveyed 439 registered dietitians (RDs) about their attitudes about overweight clients and their own weight status. RDs expressed negative attitudes toward overweight and obese individuals, reporting that an person's excess weight was the result of emotional issues, poor goal-setting, or low likelihood of adherence to dietary and exercise recommendations. RDs were less negative about their own weight status than they were about the weight of their overweight clients (17).

Oberrieder and colleagues (18) examined weight bias in 64 dietetics students and 234 RDs. Using the Bray Attitude Towards Obesity Scale (19), researchers found that both dietetics students and RDs held similarly negative attitudes toward obese individuals. Those who rated themselves at a "healthful weight" or "underweight" expressed more negative attitudes toward obesity than

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those who rated themselves as “overweight.” The authors concluded that the standard dietetics curriculum may fail to address the topic of weight bias (18). Harvey and colleagues (20) examined views about overweight and obese people and self-reported weight management practices in 187 British dietitians. Although attitudes among dietitians were mixed, they rated obese people less positively than overweight people and indicated that obese people were more responsible for their excess weight than were overweight individuals. Beliefs about the causes of obesity, particularly “lack of willpower,” explained more of the variance in treatment practices than self-reported attitudes. Campbell and Crawford (21) assessed attitudes about obesity and current weight-management practices of 400 Australian dietitians. Dietitians in the study reported frustration with their overweight and obese clients’ lack of commitment and motivation, poor compliance, and unrealistic expectations.

Most recently, Berryman and colleagues (22) assessed weight bias in samples of dietetics and nondietetics students. Students completed the Fat Phobia Scale (23), a self-report measure assessing attitudes toward obese individuals. Researchers found that dietetics students and students enrolled in other programs expressed similarly negative attitudes about obesity, reflecting a moderate amount of fat phobia in both groups. Among both dietetics and nondietetics sample groups, 16% expressed high levels of fat phobia. The authors suggest that dietetics education neither promotes nor adequately dispels weight bias among students (22).

These few studies have yielded mixed findings and important questions remain. Existing studies have used different measures to assess weight-based attitudes; thus, it is difficult to compare findings across samples. Also, a considerable limitation of previous studies is the lack of experimental research to assess the impact of RDs’ attitudes about obese individuals on their treatment practices or patient health evaluations. The current study addressed these issues with two primary objectives. First, the present study aimed to replicate and expand the work of Berryman and colleagues (22) by assessing weight bias among dietetics students using the Fat Phobia Scale with a larger sample of students from various dietetics programs throughout the country. Second, the current study used a randomized experiment to assess whether a patient’s body weight influenced RDs’ assessments and treatment decisions. It was hypothesized that obese patients, compared with thinner patients, would elicit more negative health evaluations and biased treatment recommendations, even when nutritional and health status were identical among patients.

## METHODS

A random convenience sample of 44 universities was chosen from the American Dietetic Association’s list of Didactic Programs in Dietetics, and invitations to participate were sent to department contacts. Of the schools receiving invitations, 14 agreed to participate during the autumn of 2007. The other 30 schools did not respond to invitations to participate in the study. No differences were detected between the school size or geographic location of participating and nonparticipating schools. Dietetics students at participating schools were recruited via

e-mail requests distributed through departmental electronic mailing lists and direct emails from faculty members.

In total, 297 undergraduate dietetics students participated in this randomized experimental study, which used a between-subjects design and four experimental conditions. Excluded from data analysis were 115 students with missing data on one or more key variables (eg, self-reported height or weight, one or more missing responses to questions pertaining to patient profile evaluations and/or the Fat Phobia Scale). No differences were noted with respect to demographic characteristics of students who were included in the study compared with those who were excluded due to missing data. These exclusions resulted in a final sample of 182 students who completed the study.

Between the months of September and December 2007, participants responded to e-mail invitations and were provided with a Web link to the informed consent page of an online survey. This page included a description of the study, its risks and benefits, and a description of the incentive to participate (voluntary entry into a drawing for a \$25 gift card for a popular shopping center). Only students who were 18 years of age or older were eligible to voluntarily participate in the study. The main purpose of the study, to assess weight bias in students, was not disclosed to participants. Having knowledge about the true purpose of the study would undermine the validity of the experiment, and would likely lead to participants giving socially desirable responses that do not reflect genuine attitudes or feelings. Thus, the study was described as a project examining patient health perceptions and treatment decision-making by dietetics students.

All consent procedures were in accordance with Yale University Institutional Review Board policies, and the study was approved by Yale University’s Institutional Review Board.

Upon consent, participants were asked a series of demographic questions, including age, sex, height, weight, and ethnicity. They were also asked which university they attended and how long they had been in a dietetics program. The computer program that hosted the survey then automatically randomly assigned participants based on their birth month to view one of four patient profiles. Each profile described a hypothetical patient referred to an RD for assessment and nutrition counseling. The patient in each condition was described as having recently been diagnosed with lactose intolerance. This condition was chosen because treatment options should be consistent regardless of weight status (24). Profiles included demographic information; height, weight, body mass index (BMI), and body fat percentage data; blood pressure, blood cholesterol levels, and fasting blood glucose data; dietary information, including energy intake, fruit/vegetable intake, and fiber intake; and information about physical activity, sleep habits, and perceived stress levels. The four profiles differed only in sex (male or female) or weight-related data (weight, BMI, and percentage body fat). As such, participants viewed a profile of a normal-weight female, a normal-weight male, an obese female, or an obese male.

Data in the profiles were crafted to reflect generally healthy adults, such that no particular blood or dietary

**Table 1.** Mock patient health profiles used as experimental stimuli (varying by sex and weight-related characteristics)

Patient Profiles				
	Normal-weight male	Obese male	Normal-weight female	Obese female
Age	28 years	28 years	28 years	28 years
Sex	Male	Male	Female	Female
Race	White	White	White	White
Weight <sup>a</sup>	164 lb (74.4 kg)	221 lb (100.2 kg)	143 lb (64.9 kg)	193 lb (87.5 kg)
Height	5'11" (1.80 m)	5'11" (1.80 m)	5'6" (1.67 m)	5'6" (1.67 m)
Body mass index <sup>a</sup>	23	31	23	31
% Body fat <sup>a</sup>	21	29	27	34
Blood pressure (mm Hg)	118/76	118/76	118/76	118/76
Total cholesterol	148	148	148	148
HDL <sup>b</sup> cholesterol (mg/dL) <sup>c</sup>	48	48	48	48
LDL <sup>d</sup> cholesterol (mg/dL) <sup>c</sup>	82	82	82	82
Fasting blood glucose (mg/dL) <sup>e</sup>	95	95	95	95
Energy intake per day (kcal)	2,600	2,600	1,850	1,850
% Energy from fat	28	28	28	28
Fruit/vegetable intake (servings/day)	4	4	4	4
Fiber intake (g/day)	32	32	24	24
Perceived stress level	Average	Average	Average	Average
Sleep	6 h/night	6 h/night	6 h/night	6 h/night
Physical activity	30 min moderate activity, 4 days/week			

<sup>a</sup>Weight, body mass index, and % body fat differed between profiles of the same sex.  
<sup>b</sup>HDL=high-density lipoprotein.  
<sup>c</sup>To convert mg/dL cholesterol to mmol/L, multiply mg/dL by 0.026. To convert mmol/L cholesterol to mg/dL, multiply mmol/L by 38.7. Cholesterol of 193 mg/dL=5.00 mmol/L.  
<sup>d</sup>LDL=low-density lipoprotein.  
<sup>e</sup>To convert mg/dL glucose to mmol/L, multiply mg/dL by 0.0555. To convert mmol/L glucose to mg/dL, multiply mmol/L by 18.0. Glucose of 108 mg/dL=6.0 mmol/L.

measure on its own might be indicative of poor lifestyle habits. Blood pressure and cholesterol data (25,26), as well as fasting blood glucose data (27), perceived stress level, hours of sleep, and physical activity (28) in the patient profiles were at or near general recommendations for a healthy adult. Dietary data, including energy intake per day, percentage of energy from fat, fruit/vegetable intake, and fiber intake, also were chosen to indicate an overall healthful dietary pattern in which patients consumed appropriate amounts of energy and fat based on their age and sex (29), and came realistically close to meeting fiber recommendations and fruit and vegetable recommendations (30). All four profiles are depicted in Table 1.

After viewing the patient profile, participants were asked to rate the patient's dietary quality, overall health status, and energy intake using a Likert-type scale (ranging from 1=poor to 5=excellent). Another series of questions assessed students' perceptions of the patient specifically, as well as their attitudes about obese individuals generally. To assess patient perceptions, participants were asked to rate how receptive they believed the patient would be to their treatment recommendations, how well the patient would understand their recommendations, how compliant the patient would be with treatment, how motivated the patient would be to change his/her diet, and the patient's potential to be successful in making dietary changes and maintaining dietary changes over time. Students were also asked to rate how much they might enjoy working with the patient. All questions were asked using a Likert-type scale (ranging from 1=very little to 5=very much).

To assess general attitudes about obese individuals, participants completed the 14-item Fat Phobia Scale (23). In this measure, 14 pairs of adjectives are used to describe obese people (eg, "lazy" vs "industrious", "no will power" vs "has will power"), and respondents are asked to indicate on a scale from 1 to 5 which adjective they feel best describes their beliefs about obese people. A score of 2.5 indicates neutral attitudes about obese persons, with scores more than 2.5 reflecting higher levels of fat phobia (more negative attitudes) and lower scores indicating more positive attitudes. This scale demonstrated good reliability in the present sample ( $\alpha=.81$ ).

All data were analyzed using the Statistical Package for the Social Sciences (SPSS 15.0, 2007, SPSS, Inc, Chicago, IL). To compare group data, multivariate analysis of variance was used to test for an effect of the patient's BMI on participants' health evaluations and patient perceptions in each of the four experimental conditions. A power analysis revealed that the total sample size was sufficient to detect a difference at the 0.05 significance level. Correlations were calculated between mean fat phobia scores and perceptions of patients. A  $P$  value <0.05 was considered statistically significant.

## RESULTS

### Sample Characteristics

Of the total sample of 182 students, the mean age ( $\pm$  standard deviation was  $23.1 \pm 5.40$  years), and students had been enrolled in a dietetics program a mean of  $1.7 \pm 1.16$  years. Students were primarily female (92%).

The mean BMI of students was  $22.5 \pm 3.19$ . Eighty-five percent of the sample was white, 9% Asian, 4% Hispanic, and 1% African American. BMI of students was stratified using the clinical guidelines for the classification of overweight and obesity in adults by the National Heart, Lung, and Blood Institute of the National Institutes of Health (25). This stratification showed 5% of the sample to be underweight (BMI <18.5), 80% normal weight (BMI 18.5 to 24.9), 14% overweight (BMI 25.0 to 29.9), and 1.5% obese (BMI of 30 to 39). Due to the small percentage of students who were obese, the weight groups of moderate (BMI 30 to 35) and severe obesity (BMI >35) were combined.

Random assignment to the four experimental conditions resulted in 51 participants in Condition 1 (nonobese female patient profile), 49 participants in Condition 2 (nonobese male patient profile), 38 participants in Condition 3 (obese female patient profile), and 44 participants in Condition 4 (obese male patient profile). There were no significant differences in demographic characteristics (eg, age), BMI, school participation (from schools comprising more than 5% of the sample), or level of training among students among the four experimental conditions. Despite the small discrepancies in sample sizes across conditions, variances were similar on key variables (eg, Fat Phobia Scale, patient profile perceptions), and no differences emerged between sample characteristics.

### Descriptive Findings

There were no significant differences across conditions in students' reported level of weight bias using the Fat Phobia Scale. The mean score on the Fat Phobia Scale was  $3.7 \pm 0.51$ , which represents an average amount of fat phobia, and is similar to mean scores reported in a recent study of undergraduate dietetics students (mean=3.7) (23). Table 2 summarizes the percentage of participants who agreed or strongly agreed with the negative adjectives on the Fat Phobia Scale. Scores on the Fat Phobia Scale were significantly negatively correlated with perceptions of diet quality for the obese female patient profile only, indicating that students with higher levels of fat phobia rated the obese female patient's diet quality as being poorer ( $r = -0.40$ ,  $P < 0.05$ ). Students' own body weight was unrelated to their scores on the Fat Phobia Scale, and was not correlated with any other key outcome variables.

### Analysis of Variance

A multivariate analysis of variance was computed to determine whether the patient's BMI in each of the four profiles had an effect on students' health evaluations and perceptions of the patient. Several significant effects were observed. First, students who viewed the obese patient profiles rated obese patients as being less likely to comply with treatment recommendations compared with the nonobese patient profiles [ $F(3,182) = 3.67$ ,  $P = 0.02$ ]. Second, students who viewed obese patient profiles evaluated their diet quality to be poorer [ $F(3,182) = 3.19$ ,  $P = 0.03$ ] and their health status to be poorer [ $F(3,182) = 14.03$ ,  $P < 0.001$ ], compared with the nonoverweight profiles, despite the nutritional and health information being identical

**Table 2.** Percentage of participants who agreed or strongly agreed with negative adjectives in the Fat Phobia Scale (n=182)

Negative adjective on Fat Phobia Scale	% Agreement
Lazy	41
No willpower	41
Unattractive	54
Poor self-control	65
Slow	68
Having no endurance	72
Inactive	77
Weak	31
Self-indulgent	47
Likes food	80
Shapeless	36
Overeats	81
Insecure	80
Low self-esteem	75

across weight categories for each sex in the patient profiles. In addition, students evaluated energy intake to be poorer only for the obese male patient compared with the other three patient profiles [ $F(3,182) = 5.99$ ,  $P = 0.001$ ].

There were no differences across conditions regarding students' perceptions about how receptive obese or nonobese patients would be to treatment recommendations, how well they would understand their treatment recommendations, how motivated they would be to change their diet, how successful they would be in making dietary changes, how much confidence students had in the patient's ability to maintain dietary changes, or how much students would enjoy counseling the patient. Table 3 summarizes mean scores on these outcome variables, highlighting significant differences.

### DISCUSSION

The present study replicates the findings of recent work documenting a moderate level of fat phobia among dietetics students (22), similar to levels of fat phobia that have been reported in the general population (23). Eight percent of the present sample demonstrated high levels of fat phobia (90th percentile; a score of 4.4 or more), in contrast to 16% of dietetics students who demonstrated high fat phobia in recent research (23). Only 2% of students demonstrated positive or neutral attitudes (a score 2.5 or less), which was less than the 13% of dietetics students reporting neutral attitudes in the study conducted by Berryman and colleagues (22). The majority of students in the present study (ranging from 54% to 81%) agreed that obese individuals have poor self control, lack endurance, and have low self-esteem. Students also believed that obese individuals tend to overeat and are unattractive, slow, insecure, and inactive. These stereotypes are similar to negative attitudes reported by a range of health care providers (6,21,31-33).

The current study went beyond documentation of biased attitudes to experimentally assess the impact of a patients' body weight on dietetics students' perceptions toward a patient's treatment and health evaluations. The

**Table 3.** Mean scores on key outcome variables across experimental conditions of mock obese and nonobese patient profiles

	Condition 1 (nonobese female)	Condition 2 (nonobese male)	Condition 3 (obese female)	Condition 4 (obese male)
<b>Variable</b>	←————— <i>mean ± standard deviation</i> —————→			
Fat Phobia Scale <sup>a</sup>	3.6±0.54	3.7±0.55	3.8±0.39	3.7±0.53
Perceived diet quality of patient <sup>b</sup>	3.6±0.65	3.5±0.77	3.3±0.81*	3.2±0.79*
Perceived health status of patient	3.5±0.99	3.7±0.81	2.7±0.77*	2.9±0.84*
Perceived energy intake of patient	3.5±0.95	3.4±0.98	3.3±0.88	2.8±0.86*
Receptive to treatment recommendations <sup>c</sup>	3.6±0.74	3.4±0.93	3.5±0.83	3.3±0.82
Understand treatment recommendations	3.7±0.78	3.7±0.77	3.8±0.77	3.5±0.90
Comply with treatment recommendations	3.5±0.64	3.4±0.96	3.1±0.65*	3.1±0.82*
Motivated to make dietary changes	3.3±0.84	3.2±0.89	3.2±0.83	2.9±0.97
Likelihood of success in changing diet	3.6±0.80	3.5±0.96	3.3±0.96	3.4±0.92
Confidence that patient will maintain dietary changes	3.7±0.80	3.6±0.91	3.4±0.94	3.7±0.91
Level of enjoyment in counseling patient	4.2±0.76	4.2±0.74	4.2±0.79	4.1±0.88

<sup>a</sup>Scores on Fat Phobia Scale range from 0 (no fat phobia) to 5 (high levels of fat phobia).  
<sup>b</sup>Diet quality, health status, and energy intake were rated on a 5-point Likert scale, with 1=poor and 5=excellent.  
<sup>c</sup>Items assessing perceptions of patient were rated on a 5-point Likert scale, with higher scores indicating more positive perceptions.  
\**P*<0.05, indicating that mean scores in obese profile conditions are significantly different than conditions with nonobese profiles.

findings show that dietetics students rated obese patients as being less likely than nonobese patients to comply with treatment recommendations. These results suggest the presence of some bias against obese individuals by dietetics students. Stereotypes that obese individuals are noncompliant with treatment have been reported by a range of health care providers (3,6,7,11,21,31,34), and the findings indicate that dietetics students share these negative attitudes. In the absence of information to suggest that the patient was noncompliant with treatment in the past, it is concerning that students made this assumption based on a patient's body weight. Furthermore, there is no research to suggest that obese patients are less likely to adhere to treatment recommendations than nonobese patients (35).

The results also suggest that students make automatic assumptions that obese individuals have poorer diets and overall worse health than nonobese persons, even when provided with information suggesting they have relatively healthful lifestyles. This parallels research demonstrating that health professionals endorse stereotypes that overweight and obese individuals are unhealthy and have poor eating habits (3,7). Although obesity may increase risks of several comorbid health conditions, there are instances in which BMI is not an accurate indicator of health, and there is research demonstrating that individuals can be both "fat and fit" (36-41). In addition, some students may have rated obese patients as having poorer diets than nonobese patients because they assumed that the obese patient profiles presented had underestimated calorie and dietary information. However, research suggests that calorie underestimation is common among individuals of diverse weights and is related to a range of individual characteristics (eg, sex, age, ethnicity, dieting status, education, social desirability, and body weight) (42-44). Thus, it is problematic to make negative diet and health assumptions about obese patients in the face of contradictory evidence and without information indica-

tive of impaired health status or diet quality. Such assumptions could lead obese patients to feel judged or stereotyped, especially in cases when patients are making a concerted effort to be healthy and if their health indexes are in the normal range.

Of interest, students evaluated energy intake to be poorer for the obese male patient, but not the obese female patient. The reasons for this finding are unclear. Although some previous research has documented that women are generally more vulnerable to weight bias than men (45,46), several studies are beginning to suggest that obese men may be evaluated more negatively than women in certain settings (47,48). Thus, this finding highlights the need for additional research to clarify whether there are differences in the nature and extent of weight-based stereotypes toward obese female and male patients in health care settings.

It is important to note that students' perceptions of obese patients were similar to nonobese patients in some cases. Findings showed no significant differences in students' perceptions of whether obese vs nonobese patients would understand and be receptive to their treatment recommendations, be motivated to make dietary changes, be able to make dietary changes and maintain those changes over time, and their level of enjoyment counseling these patients. It is not clear why more negative patient perceptions emerged in some cases (eg, compliance with treatment) and not others (eg, receptive to treatment, motivated to make dietary changes), especially given the high percentage of students who endorsed negative stereotypes toward obese individuals.

Thus, although stigma-reduction efforts are indicated from the overall findings, future research is needed to better understand the origins of negative attitudes about body weight and how these specifically translate into treatment practices. It would also be useful for additional research to replicate this study with more diverse patient profiles, including other weight categories (eg, overweight

vs obese), different ages, and different ethnic backgrounds. In addition, research is needed to further examine obese patients' perceptions of weight bias in interactions with dietitians, and whether these experiences influence their health care decisions.

The present study has several limitations. The cross-sectional, self-report nature of the data leave important questions unanswered. For example, without the assessment of behavioral outcomes, it is not known whether reported attitudes of dietetics students affect actual interactions with patients or their health evaluations in treatment settings. Second, the narrow BMI range of dietetics students in the current sample prevents examination of how their own weight might influence their attitudes or treatment practices. Third, given that the sample was primarily comprised of white women, findings might not be generalizable to male students or individuals of other racial/ethnic backgrounds. Fourth, data were collected on the number of years students had been in a dietetics program; however, dietetics programs vary in their introduction of counseling information to students. As such, results might reflect variability in students' ability to make counseling recommendations. Finally, we excluded 115 participants (38.7%) from analyses due to missing data. For reasons that are unclear, attrition primarily occurred after students completed the demographic questions and before continuing on with the primary survey. However, these participants were not significantly different from those included in analyses on key demographic variables.

Despite the presence of weight bias among dietetics students, there may be an increasing recognition among some RDs of the importance of shifting the focus of weight management treatment practices in ways that promote patient health while reducing negative stigma. In a recent Canadian study of 514 dietitians, 80% indicated that they should alter their focus from weight to other indicators of health in managing obesity (49). More than half of the dietitians surveyed reported that part of a dietitian's role is to counsel obese clients to be more accepting of their current weight. Similarly, Campbell and Crawford (21) found that dietitians ranked the goal of achieving weight loss to the normal weight range as the least important outcome measure to indicate success in weight management. Improved food and exercise habits, clinical indicators of health, body image, and self-confidence were ranked as the most important outcome measures to define success. Other research shows that RDs are increasingly endorsing a lifestyle approach to weight management that acknowledges the benefits of healthful behavior changes, irrespective of weight loss (50,51). This approach to weight management is also endorsed by the American Dietetic Association (52) and its application in dietetics curricula may be useful for reducing weight bias.

## CONCLUSIONS

Taken together, these findings suggest a need to increase education and awareness about weight bias in existing dietetics curricula to ensure that negative assumptions about obese patients do not adversely influence the treatment practices of future RDs. Specifically, findings suggest that students would benefit from information that challenges their assumptions about obese patients. It

may be useful to provide students with evidence summarizing scientific research that documents positive health indicators (such as normal cholesterol and blood pressure, or good physical fitness) among individuals of diverse body weights, and increasing students' awareness that a person's body weight is not necessarily an accurate or automatic indicator of fitness level, diet quality, or health status (36-41).

Given the moderate level of fat phobia present in the current sample of dietetics students, and their attributions that obese individuals are less compliant with treatment than thinner individuals, it seems warranted to include stigma-reduction interventions as part of standard dietetics curriculum. Interventions that challenge negative weight-based stereotypes (eg, that obese patients are lazy or noncompliant), and foster sensitive and empathic communication skills may be particularly useful. Previous work has found that multiple strategies to reduce weight bias (eg, written materials, videos, role plays) have been successful in dispelling weight-based stereotypes among students in health-related disciplines (53). Thus, intervention studies targeting dietetics students could be delivered through course readings and lectures summarizing existing scientific research on weight bias, by including case examples of patients who challenge weight-based stereotypes, and by practicing sensitive communication skills through student role-plays in nutrition counseling courses.

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