

Weight bias in nutritional practice: a study with nutrition students

Preconceito relacionado ao peso na conduta nutricional: um estudo com estudantes de nutrição

Prejuicios relacionados con el peso en la conducta nutricional: un estudio con estudiantes de nutrición

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Abstract

Obesity is associated with psychosocial problems like stigma, discrimination, and bias. Studies have found that nutritionists and nutrition students display negative attitudes and biases toward obese individuals. This study examined the existence of nutrition students' bias toward obese individuals. The students answered questionnaires by completing on-line forms with demographic data and self-reported weight and height and were assigned to one of four randomly selected hypothetical cases of patients referred to a nutritionist after receiving a diagnosis of lactose intolerance (normal weight man; normal weight woman; obese man; and obese woman). Except for weight, body mass index (BMI), and daily energy intake, all information on diet, habits, and health conditions were identical for profiles of the same sex. The questionnaire included questions on the indication of procedures and approaches during the consultation, consultation time, counseling strategies, dietary and health evaluation, and students' affective and behavioral reactions. Three hundred and thirty-five students participated, mostly women, with mean BMI of 23kg/m². Patient's weight influenced consultation time and students' perceptions and treatment approaches and strategies. The study revealed biases and negative attitudes mainly involving the students' perceptions and reactions to obese patients, and obese women generally received the worse evaluations.

Prejudice; Obesity; Students; Nutritionists

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Introduction

Obesity is a major public health problem, due not only to the increased risk of cardiometabolic diseases, but also to psychosocial problems such as body dissatisfaction, eating disorders, stigma, discrimination, and bias ^{1,2}.

Bias toward obesity includes negative attitudes (feelings, stereotypes, attributes), beliefs, and behaviors toward an individual perceived as obese or “fat” ^{3,4}. Stigma is defined as a negative attribute assigned to an individual, who suffers discrimination through associations between given attributes and stereotypes (the cognitive component of stigma) ⁵ – the behavioral manifestation of bias, even when manifested unconsciously. Bias is the affective component of stigma ⁴.

The term “weight bias” ^{6,7,8,9,10,11,12} has been applied to the bias itself (attitudinal component), stereotypes (components related to beliefs concerning the etiology and maintenance of obesity), and discrimination, manifested through acts and behaviors ^{4,10}.

Studies show that weight-related discrimination and bias are commonplace in many countries ¹¹ and are growing ¹³. Stigma is often used as a tool for social control on grounds of discouraging unhealthy behaviors and improving the health of stigmatized obese individuals, who are held responsible for their own excess weight ^{14,15,16}. In fact, however, research has shown the rise in obesity rates in the presence of stigma, along with an increase in binge eating and vulnerability to depression, low self-esteem, anxiety, and lower levels of physical activity in individuals that are stigmatized because of their weight ¹⁴, who are also less inclined to seek healthcare services preventively, besides showing worse outcomes in weight ¹⁷ and being subject to greater cardiometabolic risk to the extent that they introject the bias ¹⁸.

Healthcare professionals are cited by obese individuals as one of the most common sources of weight bias. Patients report inappropriate and disrespectful remarks, in addition to feeling misunderstood ¹⁹. Nutritionists are among the professionals cited ^{20,21}, and bias rates can be high even among experts in obesity treatment ⁶. Likewise, negative attitudes and bias toward obese individuals have been reported in undergraduate students in nutrition ^{8,20,22}, which is troublesome considering that they will be treating obesity in the future at various levels of healthcare.

Some studies have explored the attitudes of nutrition students ^{8,9,20,22}, including evaluation of attitudes in simulated cases or mock consultations with obese patients ^{8,23,24}. In Brazil, studies have explored the issue of weight-related stigma and bias from the obese individual’s perspective through qualitative methodologies ^{25,26,27}, but the literature also includes a cross-sectional study on the occurrence of discrimination reported by adolescents in a cohort study ²⁸, a systematic review of healthcare professionals’ beliefs and practices toward obesity (which did not include any study conducted in Brazil) ²⁹, and only one qualitative study analyzing the perspectives of healthcare professionals and patients concerning obesity ³⁰. On the issue of bias toward obesity among nutritionists, there is a single study on nutritionists’ opinions concerning the factors involved in the development of obesity and the characteristics attributed to obese persons ³¹.

Considering the theme’s relevance, the importance of nutritionists’ work in treating obesity, and the shortage of studies on weight bias among health professionals and students in Brazil, the aim of this study was to assess the existence of bias toward obese individuals among nutrition students, based on an analysis of the influence of individual body weight on nutritional practices, perceptions, and evaluation of health aspects in a hypothetical case of lactose intolerance (a problem clinically unrelated to nutritional status).

Methods

The study was part of the project *Nutritionists’ Health Study* – NutriHS of the School of Public Health, University of São Paulo (FSP/USP), Brazil. Details of the objectives and methods have been published elsewhere ³².

The study was announced to undergraduate nutrition students enrolled in public and private schools and universities in the State of São Paulo, after approval by the institutions and via Internet, social networks, and the FSP/USP website. Inclusion criteria were age 18 to 40 years and current

enrollment in undergraduate nutrition. The NutriHS research project was approved by the Institutional Review Board and complied with the guidelines of *Resolution n. 196/1996* of the Brazilian National Health Council³³, and participants consented on-line to participate before they initiated completion of the study instruments.

The sample size was calculated with a size effect of 15% and 80% power, resulting in a sample of 218. An additional 15% was included to cover possible losses, totaling 251 students.

By accessing the study on-line, students completed the demographic data (sex, date of birth, skin color, undergraduate school year, marital status, father's or guardian's level of schooling, family income, type of teaching institution), self-reported weight and height, and other life history data. Anthropometric data were used to classify their nutritional status according to body mass index or BMI (weight/height²), as per World Health Organization guidelines³⁴.

Attitudes toward obesity were assessed by answers to hypothetical case studies of patients referred to a nutritionist after receiving a diagnosis of lactose intolerance, adapted from Puhl et al.⁸. Questions included indication of procedures and approaches during the consultation, consultation time, counseling strategies and/or orientation offered to the patient, evaluation of the patient's diet and health, and affective and behavioral reactions toward patients, using questions adapted from studies by Campbell & Crawford³⁵, Hebl & Xu³⁶, Harvey et al.²¹, and Foster et al.³⁷.

The main purpose of the study – to assess the existence de bias toward obese individuals – was not disclosed to the students, since it might have influenced the results. The program that housed the on-line survey randomly selected one out of four hypothetical cases for each participant: (1) normal weight man (BMI = 23kg/m²); (2) normal weight woman (BMI = 23kg/m²); (3) obese man (BMI = 31kg/m²); and (4) obese woman (BMI = 31kg/m²). The profiles of the four cases provided demographic and anthropometric data, laboratory test results, blood pressure, dietary data, and life habits (sleep and physical activity) – with normal values according to the prevailing guidelines. With the exception of weight, BMI, and daily energy intake (which only differed between females and males), all the information was identical for the profiles of the same sex (Table 1).

The answer to consultation time was given in minutes spent in the first consultation with the hypothetical patient. For the procedures, approaches, and counseling strategies and/or orientation, the students were instructed to check the ones they would use in the hypothetical situation, among the various possibilities listed in the questionnaire (they could check as many procedures and approaches as they felt necessary, assessed according to the frequency of the choice among the students).

Evaluation of the patient's diet and health in the items on quality of diet, overall health status, and energy intake used a five-point scale (1 – very bad; 2 – bad; 3 – fair; 4 – good; and 5 – excellent). In these items, the goal was to analyze whether the patient's weight would negatively influence the recommended approaches and evaluation of the patient's health status, even if the data suggested healthy life habits, which would denote prejudice by students based on the only characteristic that differed between the cases, namely body weight, an important dimension of weight bias.

The reactions and perceptions toward the patient were assessed with questions concerning the extent to which the students believed in the food intake as reported by the patient, health-related perceptions, self-care, and discipline, seriousness of the health problem, the patient's expectations concerning the consultation, and the need for referral to psychological follow-up. The choices in a five-point scale were (1 – not at all; 2 – very little; 3 – a little; 4 – a lot; and 5 – extremely). These questions explored the student's feelings, beliefs, and attitudes toward the obese individual.

Statistical analysis

Random distribution of the hypothetical cases (1 – normal-weight woman; 2 – obese woman; 3 – normal-weight man; 4 – obese man) among the students was tested with the chi-square test. There was no statistically significant difference in random distribution of the hypothetical cases (N1 = 82, N2 = 93, N3 = 80, and N4 = 80) among the students ($\chi^2 = 0.707$), and no differences were identified in the students' characteristics (age, BMI, race, family income, undergraduate year) according to the randomly selected hypothetical case.

Comparison of the students' answers on the patient's consultation time (in minutes) was analyzed by means and standard deviations. Evaluation of health status, quality of diet, and energy intake, plus

Table 1

Demographic and anthropometric data, laboratory results, blood pressure, diet, and life habits of four hypothetical cases of patients presented to undergraduate nutrition students. NutriHS Study, Brazil, 2015.

	Normal weight		Obese	
	Man	Woman	Man	Woman
Age (years)	30	30	30	30
Weight (kg)	66.5	58.8	89.6	79.4
Height (m)	1.70	1.60	1.70	1.60
BMI (kg/m ²)	23.0	23.0	31.0	31.0
Total cholesterol (mg/dL)	148	148	148	148
HDL-cholesterol (mg/dL)	51	51	51	51
LDL-cholesterol (mg/dL)	82	82	82	82
Fasting glucose (mg/dL)	90	90	90	90
Systolic/diastolic blood pressure (mmHg)	120/80	120/80	120/80	120/80
Energy intake (Kcal/dia)	2,400	1,800	2,400	1,800
% energy consumed as fat	25	25	25	25
Fruit consumption (portions/day)	3	3	3	3
Consumption of vegetables and greens (portions/day)	3	3	3	3
Fiber consumption (g/day)	28	28	28	28
Hours of sleep per night	8	8	8	8
Physical activity	30 minutes, 5 days/week	30 minutes, 5 days/week	30 minutes, 5 days/week	30 minutes, 5 days/week

HDL: high-density lipoprotein; LDL: low density lipoprotein.

reactions and perceptions toward patients (on scales from 1 to 5) are ordinal variables, but they were also assessed by means and standard deviations. Comparison of the answers concerning magnitude of the evaluation or agreement used comparative analyses of the mean of the four cases, with the Kruskal-Wallis test followed by the multiple comparisons test to identify differences.

For the variables “procedures and approaches” and “treatment strategies”, the frequencies of “yes” answers were compared between the four cases, analyzed by Fisher’s exact test.

The analyses were performed with SPSS 17.0 (SPSS Inc., Chicago, USA), with significant set at 5%.

Results

Participation totaled 335 students, the majority women (93.7%), mean age 23.5 years (standard deviation – SD = 4.9), 65.1% white, 86.6% single, 32.8% for whom the head-of-family had a complete secondary education, 58.2% with family income between one and five times the minimum wage, 78.5% (n = 263) enrolled in private institutions, 39.7% (n = 133) enrolled in the 1st undergraduate year, 20.9% (n = 70) in the 2nd year, 18.5% (n = 62) in the 3rd year, 17.3% (n=58) in the 4th year, and 3.6% (n = 12) in the 5th year (only one university offered an undergraduate nutrition course lasting five years).

Mean BMI was 23 kg/m² (22.9kg/m² in females and 24.8kg/m² in males), the majority (66.4%) with normal weight, followed by overweight (20.7%), low weight (7.5%), and obesity (5.4%).

Table 2 shows the answers to the hypothetical patient cases (1 – normal-weight woman; 2 – obese woman; 3 – normal-weight man; and 4 – obese man) in relation to consultation time, patient evaluation, and student’s reactions.

The consultation time reported by students for obese patients of both sexes was longer than in normal-weight female patients, but not in relation to normal-weight male patients.

Evaluation of female patients' dietary quality was worse for obese female patients, while there was no difference between obese and normal-weight males; however, the evaluation of normal-weight male patients' dietary quality was significantly better than for obese female patients.

Evaluation of the amount of energy intake and overall health status was also worse for obese female patients when compared with normal-weight female patients, and the same was true for obese men compared to normal-weight men. There was no difference in the evaluation of these factors between obese patients.

The perception of self-reported food consumption was only worse for obese female patients, while there was no difference in male patients. However, the evaluation of obese women was also worse than both normal-weight and obese men. The nutrition students also manifested worse perceptions of obese versus normal-weight female patients in relation to "staying healthy", self-care, and discipline, but the same was not true for male patients.

On questions 5, 9, and 10, the students stated that they would need to be stricter and more patient with obese patients and that they would feel more bothered by obese patients when compared to normal-weight patients of both sexes (Table 2).

When compared to normal-weight patients of both sexes, the nutrition students showed a worse perception of obese male patients on the question, "To what extent do you believe this patient will follow your nutritional recommendations?". There was no difference between obese and normal-weight female patients on this question. On question 13, students thought that obese female patients would benefit more from psychological follow-up, when compared to normal-weight females and normal-weight and obese male patients (Table 2).

Table 3 shows the answers on procedures and approaches that the students would adopt with the hypothetical patients.

Students that responded to hypothetical cases involving obese patients (of both sexes) were more likely to plan to "explore the patient's weight history" and "discuss the need to lose weight". There was no difference between cases in the other procedures and approaches (Table 3).

Table 4 shows the treatment strategies recommended by students for the hypothetical cases.

In relation to recommendation of treatment strategies, the students that responded to hypothetical cases of obese patients (of both sexes) were more likely to use the strategies "keeping a food diary with information on perceived hunger" and "orientation to reduce calorie intake and consume less caloric foods". However, they would recommend the strategy of "individual follow-up" more often for obese men than for obese women (Table 4).

Discussion

To our knowledge this is the first study in Brazil to explore weight bias in nutrition students. By addressing students' approaches and perceptions in relation to hypothetical cases, we found that the patient's weight influenced the time spent in the initial consultation, the evaluations of diet quality, amount of energy intake, and overall health status, perceptions and attitudes, and treatment approaches and strategies.

Importantly, the hypothetical patients came to the mock consultation with a recent diagnosis of lactose intolerance, a problem bearing no relationship to nutritional status. Thus, the findings corroborate a real difference in case management according to the patient's weight, since all the other parameters were identical and bore no relationship to the diagnosis of lactose intolerance.

The sample of nutrition students consisted mainly of females, normal-weight, single, white, with family income from one to five times the minimum wage, enrolled in private institution, and mostly enrolled in the first and second undergraduate years in nutrition. The undergraduate course in nutrition traditionally consists mostly of female students. Other studies in undergraduate nutrition students (to investigate various issues) found more than 80% of women^{38,39}, and some studies used gender as an exclusion criterion due to the overwhelming majority of female students^{40,41}.

In their answers to the randomly distributed cases, students took more time on average in consultations with obese women (51 minutes) than with normal-weight women, but this difference was not seen with male patients. According to a study by Harvey et al.²¹ in English nutritionists, the mean

Table 2

Answers by undergraduate nutrition students (N = 335) concerning consultation time, evaluation, reactions, and perceptions in relation to a hypothetical patient. NutriHS Study, Brazil, 2015.

Variables	Hypothetical patient								p-value ##
	Normal weight woman *		Obese woman **		Normal weight man ***		Obese man #		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Consultation time (minutes)	41.51	17.29	51.34 ^a	31.97	45.82	18.40	51.04 ^a	26.89	0.030
Evaluation ###									
1. Quality of diet	4.12	0.55	3.57 ^a	0.80	3.80 ^b	0.77	3.79	0.72	< 0.001
2. Energy intake	3.80	0.55	3.22 ^a	0.82	3.73 ^b	0.84	3.35 ^c	0.75	< 0.001
3. Overall health status	4.00	0.61	3.16 ^a	0.90	3.84 ^b	0.75	3.36 ^{a,c}	0.82	< 0.001
Reactions and perceptions toward patient §									
1. Do you believe the patient's reported food intake?	3.29	0.69	2.78 ^a	0.75	3.48 ^b	0.57	3.08 ^b	0.65	< 0.001
2. How healthy do you think this patient is?	3.50	0.59	2.89 ^a	0.76	3.41 ^b	0.59	3.05	0.69	< 0.001
3. How well do you think this patient cares for himself/herself?	3.65	0.60	2.96 ^a	0.71	3.48	0.57	3.20	0.77	< 0.001
4. How disciplined do you think this patient is?	3.55	0.63	2.92 ^a	0.82	3.40	0.88	3.11	0.76	< 0.001
5. How strict would you have to be with this patient?	2.85	0.76	3.12 ^a	0.81	2.81 ^b	0.80	3.10 ^{a,c}	0.82	0.018
6. How serious do you think this nutritional/health problem is?	3.20	1.13	3.41	0.84	3.11	1.02	3.48	0.95	0.060
7. Do you think that this patient's consultation is a waste of time?	1.10	0.30	1.13	0.49	1.14	0.55	1.15	0.48	0.904
8. Would seeing this patient result in satisfaction with your work?	4.30	0.60	4.30	0.75	4.33	0.82	4.31	0.80	0.997
9. How patient would you have to be with this patient?	2.90	0.91	3.30 ^a	0.87	2.89 ^b	1.03	3.20 ^{a,c}	0.95	0.006
10. How bothersome/tedious/annoying would this patient be?	1.78	0.80	2.06 ^a	0.93	1.74 ^b	0.78	2.01 ^{a,c}	0.82	0.022
11. How great is your personal desire to help this patient?	4.28	0.53	4.26	0.66	4.35	0.64	4.24	0.75	0.710
12. To what extent do you believe this patient would follow your nutritional recommendations?	3.80	0.64	3.66	0.60	3.90	0.61	3.59 ^{a,c}	0.72	0.009
13. Do you believe that this patient would benefit from psychological follow-up?	2.71	1.07	3.15 ^a	1.18	2.45 ^b	1.11	2.83 ^b	1.09	< 0.001
14. How optimistic are you in relation to this patient's response to treatment?	4.15	0.63	4.16	0.56	4.23	0.66	4.06	0.77	0.473

SD: standard deviation.

Note: (a) different from case 1; (b) different from case 2; (c) different from case 3.

* Normal weight woman (BMI = 23kg/m²);

** Obese woman (BMI = 31kg/m²);

*** Normal weight man (BMI = 23kg/m²);

Obese man (BMI = 31kg/m²);

Kruskal-Wallis test, followed by multiple comparisons of rank means.

Multiple choice: (1) very bad, (2) bad, (3) fair, (4) good, and (5) excellent.

§ Multiple choice: (1) not at all, (2) very little, (3) a little, (4) a lot, and (5) extremely.

Table 3

Frequency of procedures and approaches that undergraduate nutrition students (N = 335) would adopt during the first consultation with a randomly selected hypothetical patient. NutriHS Study, Brazil, 2015.

Procedures and approaches	Normal weight woman *	Obese woman **	Normal weight man ***	Obese man #	p-value ##
	(n = 82) Yes (%)	(n = 93) Yes (%)	(n = 80) Yes (%)	(n = 80) Yes (%)	
1. Collect information on patient's current eating	95.1	97.8	92.5	95.0	0.430
2. Explore patient's eating history	86.6	90.3	80.0	80.0	0.153
3. Explore patient's weight history	69.5	82.8	68.8	83.8	0.026
4. Explore patient's family history	79.3	91.4	78.8	82.5	0.068
5. Evaluate to what extent the patient is prepared to change eating habits	80.5	74.2	71.3	71.3	0.475
6. Verify patient's expectations concerning the consultation and treatment	95.1	84.9	86.3	83.8	0.077
7. Talk about the patient's family and verify his/her sources of support	41.5	47.3	46.3	47.5	0.863
8. Order more laboratory tests	56.1	61.3	50.0	53.8	0.504
9. Apply 24-hour food recall	65.9	74.2	70.0	58.8	0.176
10. Discuss the need to lose weight	20.7	63.4	26.3	48.8	0.000
11. Apply food frequency questionnaire	54.9	60.2	62.5	70.0	0.256
12. Nutritional counseling with food guide	59.8	60.2	57.5	51.3	0.639
13. Discuss food groups and portions	56.1	62.4	51.3	66.3	0.220
14. None of the above	0.0	0.0	0.0	1.3	0.478

* Normal weight woman (BMI = 23kg/m²);

** Obese woman (BMI = 31kg/m²);

*** Normal weight man (BMI = 23kg/m²);

Obese man (BMI = 31kg/m²);

Fisher's exact test.

consultation time at the first visit did not differ between overweight and obese patients (about 35 minutes). On the other hand, according to the study by Hebl & Xu ³⁶ in American physicians, consultation time was shorter for overweight (25 minutes) and obese patients (22 minutes) than for normal-weight patients (31 minutes). Using more time in an initial consultation with an obese individual can be positive, since it may mean greater attention, opportunities for interaction, and more individualized care, but it could also mean that students consider obese patients more complex than normal-weight patients, thus requiring more time. The complexity of eating is not related to the individual's weight, but to the way people live their experiences and their relationship with food.

The students' evaluation of obese patients' diet strongly suggests the presence of bias. They expressed a worse assessment of the quality of diet, amount of energy intake, and overall health status of obese female patients when compared to normal-weight female patients, besides worse assessment of energy intake and health status in obese men. This finding is highly relevant, since the evaluations of obese patients were worse even when the objective data on life habits, calorie intake, and dietary characteristics were identical to those of normal-weight patients. The result indicates that the nutrition students draw conclusions automatically when in contact with an obese patient and reinforces the theory that healthcare professionals equate the obese individual with certain negative stereotypes ^{31,37,42}. Likewise, Puhl et al. ⁸ found that American nutrition students gave a worse assessment to the same aspects in obese patients when compared to normal-weight patients (except for energy intake in obese women).

Table 4

Frequency of treatment strategies that undergraduate nutrition students (N = 335) would recommend during the first consultation with a randomly selected hypothetical patient. NutriHS Study, Brazil, 2015.

Treatment strategies	Normal-weight woman *	Obese woman **	Normal-weight man ***	Obese man #	p-value ##
	(n = 82) Sim (%)	(n = 93) Sim (%)	(n = 80) Sim (%)	(n = 80) Sim (%)	
1. Patient should keep weight diary	18.3	31.2	20.0	32.5	0.068
2. Patient should keep food diary	57.3	50.5	62.5	60.0	0.416
3. Patient should keep food diary with information on feeling hungry	32.9	48.4	28.8	45.0	0.024
4. Orientation on food purchases and preparation of meals	79.3	76.3	82.5	82.5	0.705
5. Orientation to reduce calorie intake and increase consumption of less caloric foods	35.4	53.8	35.0	65.0	0.000
6. Orientation on the incorporation of other forms of physical activity in the patient's routine	40.2	55.9	43.8	50.0	0.172
7. Elaboration of a food plan	84.1	82.8	83.8	81.3	0.966
8. Elaboration of short-term follow-up planning	29.3	25.8	36.3	30.0	0.524
9. Elaboration of long-term follow-up planning	47.6	50.5	32.5	51.3	0.053
10. Orientation to avoid specific lactose-source foods	75.6	65.6	65.0	77.5	0.160
11. Orientation to avoid "junk food"	58.5	67.7	60.0	60.0	0.576
12. Group follow-up	2.4	2.2	2.5	2.5	1.000
13. Individual and group follow-up	18.3	30.1	18.8	20.0	0.203
14. Individual follow-up	65.9	41.9	55.0	70.0	0.001
15. None of the above	0.00	0.0	1.3	1.3	0.363

* * Normal weight woman (BMI = 23kg/m²);

** Obese woman (BMI = 31kg/m²);

*** Normal weight man (BMI = 23kg/m²);

Obese man (BMI = 31kg/m²);

Fisher's exact test.

To assume that an individual is unhealthy or fails to adopt healthy life habits because of their body weight is a form of bias that can interfere in the health professional's approach to the obese patient. Although obesity is related to various comorbidities, there are situations in which it bears no relationship to metabolic complications, as demonstrated by recent studies on metabolically healthy obese individuals ^{43,44,45,46,47}.

As regards students' reactions and perceptions, our study showed that they believe less in the food consumption reported by obese female patients than by any other patients, suggesting an influence not only from weight, but also from the patient's gender. The students' worse evaluations of the amount of energy intake ("Do you believe the patient's reported food intake?") for obese patients could also be associated with disbelief in the reported food intake, but this was only confirmed in female patients. In fact, there are studies that associate greater occurrence of underreporting of energy intake among women ^{48,49} and even among obese individuals ^{50,51}. But it is worthwhile considering that both women in general and obese individuals are more subject to preoccupation with the body and weight and practicing restrictive diets – aspects that also increase the susceptibility to underreporting ⁴⁹ – and that factors like age, desire for social acceptance, ethnicity, diet, and education also affect this phenomenon ⁸.

Likewise, the students also gave a more negative assessment to “how healthy” the person was, “self-care”, and “discipline” in the obese female patient when compared to the normal-weight female, but the same was not true for obese men. Hebl & Xu ³⁶ also found worse perceptions among physicians toward overweight and obese patients on the three items, but they did not investigate the impact of gender.

Interestingly, the current study’s sample consisted mainly of female students, and obese female patients generated worse perception on their part when compared to normal-weight female patients, but the same was not true for male patients. The reasons for such findings are not clear, but they may be related to gender issues, excessive preoccupation with body shape, and adherence to weight-loss diets, all frequent experiences in women ⁵². Historically, women were associated with consuming little food, attributed to the fact that food was the only terrain considered “legitimately female”, besides the existence of canons for the female body and beauty standards; even in historical times when such standards were associated with more curvaceous bodies, they placed greater value on the body’s proportions and not on excessive fat ⁵³. According to Menucci et al. ⁵⁴, the feeling of inappropriateness, inadequacy, and individual guilt vis-à-vis ideals of beauty and the unattainable body images propagated by the mass media constitute a strategy of domination and diminishment through the devaluation of bodies, of which women are the greatest victims. The students also felt that they would need to be stricter with obese patients of both sexes, besides feeling that such patients would be more “bothersome/tedious/annoying” and that they would need more patience to deal with them. Such findings are problematic, because in professional practice, obese individuals could feel judged, and that a stricter and more unyielding stance could affect treatment negatively, thus undermining adherence.

The students were also less inclined to believe that obese men would follow their nutritional recommendations. This finding is curious, since some studies have associated male gender with lower treatment dropout rates ⁵⁵. Presnell et al. ⁵⁶, in a study of predictive factors for weight loss, found that men demonstrated self-efficacy (considered themselves more capable of changing life habits) before the intervention, besides displaying fewer depressive symptoms and less binge eating than women (factors related to greater weight loss).

Women are usually considered more prone to emotional and affective interferences in the weight loss process ⁵⁷, corroborated by the students’ perception that obese female patients would benefit more than any other patients from psychological follow-up. In Hebl & Xu ³⁶, physicians also referred overweight and obese patients more often to psychological care when compared to normal-weight patients, but they did not analyze the difference between sexes.

The other reactions and perceptions toward the seriousness of the hypothetical health problem (lactose intolerance) – such as “considering the patient consultation a waste of time”, “professional satisfaction”, and “extent of personal desire to help the patient and optimism” – were similar for obese and normal-weight patients, corroborating findings by Puhl et al. ⁸.

There were few differences in the recommended procedures, approaches, and treatment strategies. The students highlighted “exploring the patient’s weight history” and “discussing the need to lose weight” more often for obese patients of both sexes than for normal-weight patients, suggesting that even when the patient seeks nutritional treatment for other reasons (e.g., lactose intolerance), body weight becomes a key focus of the consultation ⁵⁸. Besides, the importance of exploring weight history is not limited to obese patients, since normal-weight patients can present relevant variations in body weight.

Interestingly, more than 20% of the students reported discussing the need to lose weight and 35% recommended lower calorie intake even in normal-weight patients. This finding may relate to their understanding of the nutritionist’s role as “promoting weight loss” and “prescribing restrictive diets”. In a Brazilian qualitative study with healthcare professionals in the Family Health Strategy, some professionals voiced a rather narrow view of the nutritionist with such phrases as “a nutritionist is a professional who prescribes dieting” or “the nutritionist is for losing weight” and “the nutritionist controls patients’ diets” ⁵⁹.

The students also mentioned “keeping a food diary with information on hunger” and “orientation to reduce calorie intake” more often for obese patients of both sexes. A food diary recording perception of hunger is an interesting strategy for any individual with interest in or need to change their

food habits, and not only for obese individuals⁶⁰. The finding may be related to the students' belief that obese patients are more "compulsive" and that they invariably eat worse.

Finally, the students recommended individual follow-up more frequently for obese men and less for obese women in comparison to their normal-weight gender peers. Since the study sample consisted mainly of female nutrition students, why would they recommend individual follow-up less for women than for men?

In short, patient's weight influenced consultation time and students' perceptions, approaches, and treatment strategies, with the identification of biases and negative attitudes mainly related to the future nutritionists' perceptions and reactions toward obese patients, where obese women received the worst evaluations in general. Furthermore, the evaluation of weight's influence on the students' perceptions and approaches evidenced not only their bias toward obese individuals, but that such bias was even greater in the case of female patients. The stigma thus involves both weight and gender.

Although this was the first study of its kind in Brazil and it used an adequate sample size, it only evaluated university students in the state of São Paulo, enrolled in different undergraduate years. The NutriHS survey was also conducted on-line, so the answers to specific questions had a limited number of choices. Considering that the study used questionnaires and scales with the answers, one should consider the risk of desire for social acceptance, with answers given according to what the respondent thought was expected or most appropriate⁶¹. Other study designs could be useful for elucidating how attitudes toward obese individuals and obesity evolve over the course of undergraduate years or potentially undergo changes following interventions to reduce negative attitudes and bias.

Conclusion

Weight bias in relation to obese individuals exists among undergraduate nutrition students in this sample in São Paulo, corroborating international studies. Gender also influenced students' perceptions, and the evaluations and attitudes were worse for obese female patients compared to obese males. Since a hypothetical patient's body weight influences the perception and evaluation of their health and therapeutic approaches, the topic of bias, stigma, and discrimination toward obese individuals and obesity should be included in the undergraduate curriculum in nutrition, besides including it in continuing education for healthcare professionals.

Contributors

A. A. Obara was responsible for the study conception, besides collecting and organizing the data and participating in the data analysis and interpretation. S. R. G. F. Vivolo participated in the study conception as head of the NutriHS project and its database and participated in the writing and critical revision of the manuscript. M. S. Alvarenga was responsible for the study conception, as supervisor of the research project, and participated in the data analysis and interpretation. All of the authors revised and approved the final version for publication.

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Resumo

A obesidade está relacionada a problemas psicossociais como estigma, discriminação e preconceito. Estudos verificaram que nutricionistas e estudantes de nutrição apresentam atitudes negativas e preconceito em relação aos indivíduos com obesidade. O estudo avaliou a existência de preconceito em relação aos indivíduos obesos por parte de estudantes de nutrição. Os estudantes responderam aos questionários por meio de preenchimento de formulários on-line – dados demográficos, peso e altura autorreferidos; em seguida foram direcionados para um de quatro casos hipotéticos – sorteados aleatoriamente – de um paciente referenciado a um nutricionista após receber o diagnóstico de intolerância à lactose (sexo masculino e eutrófico; sexo feminino e eutrófica; sexo masculino e obeso; e sexo feminino e obesa). Com exceção do peso, do índice de massa corporal (IMC) e do consumo energético diário, todas as informações relativas à dieta, hábitos de vida e condições de saúde eram idênticas para os perfis do mesmo sexo. Incluíram-se questões relativas à indicação de procedimentos e condutas durante a consulta, tempo de atendimento, estratégias de aconselhamento, avaliação da dieta e da saúde, e reações afetivas e comportamentais. Participaram 335 estudantes, prioritariamente mulheres, com IMC médio de 23kg/m². O peso do paciente influenciou o tempo de atendimento, percepções, condutas e estratégias de tratamento, com a identificação de preconceitos e atitudes negativas principalmente relacionadas às percepções e reações dos estudantes diante dos pacientes com obesidade, sendo que a mulher com obesidade recebeu piores avaliações no geral.

Preconceito; Obesidade; Estudantes;
Nutricionistas

Resumen

La obesidad está relacionada con problemas psicossociales como: estigma, discriminación y prejuicios. Algunos estudios verificaron que nutricionistas y estudiantes de nutrición presentan actitudes negativas y prejuicios, en relación con los individuos con obesidad. El estudio evaluó la existencia de prejuicios, en relación con los individuos obesos, por parte de estudiantes de nutrición. Los estudiantes respondieron los cuestionarios mediante la cumplimentación de formularios on-line - datos demográficos, peso y altura autoinformados; en seguida fueron dirigidos hacia uno de los cuatro casos hipotéticos -sorteados aleatoriamente- de un paciente enviado a un nutricionista, tras recibir el diagnóstico de intolerancia a la lactosa (sexo masculino y eutrófico; sexo femenino y eutrófica; sexo masculino y obeso; y sexo femenino y obesa). Con excepción del peso, del índice de masa corporal (IMC) y del consumo energético diario, toda la información relativa a la dieta, hábitos de vida y condiciones de salud eran idénticas para los perfiles del mismo sexo. Se incluyeron cuestiones relativas a la indicación de procedimientos y conductas durante la consulta, tiempo de atención, estrategias de asesoramiento, evaluación de la dieta y salud, así como reacciones afectivas y comportamentales. Participaron 335 estudiantes, en su mayoría mujeres, con un IMC medio de 23kg/m². El peso del paciente influyó en el tiempo de atención, percepciones, conductas y estrategias de tratamiento, con la identificación de prejuicios y actitudes negativas, principalmente relacionadas con las percepciones y reacciones de los estudiantes ante los pacientes con obesidad, donde las mujeres con obesidad recibieron peores evaluaciones en general.

Prejuicio; Obesidad; Estudiantes; Nutricionistas

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