

## ANTI-OBESITY ATTITUDES AMONG NUTRITION COURSE STUDENTS IN BRAZIL AND PORTUGAL

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**Abstract:** Obesity is a serious global public health problem and is related to adverse metabolic effects and increased risk of some diseases. Psychological and social consequences are also related to obesity, and despite the relevance of environmental factors in its etiology, obese individuals are considered guilty of their condition and are frequent targets of discrimination and prejudice. Even professionals involved in the treatment of obesity demonstrate prejudice and negative attitudes towards obese individuals, and the same behavior is observed among students in the health field, especially in the Nutrition Course, in Brazil and in other countries. In this context, the present study set out to investigate the beliefs and attitudes of undergraduate Nutrition students in Brazil and Portugal, in relation to obese individuals. A questionnaire composed of sociodemographic questions, health conditions, lifestyle and nutritional status of the students was applied and, to assess beliefs and attitudes related to obesity, the Anti-Obesity Attitude Scale was used. The sample consisted of 193 students, 133 Brazilians and 60 Portuguese. Portuguese students had more negative attitudes towards obesity when compared to Brazilians. In general, reasonably high averages were observed, indicating the existence of prejudice against obese individuals on the part of nutrition students. Therefore, the need for an adequate approach to the subject during Nutrition training is identified, considering that Nutrition professionals play an important role in the treatment of these patients and must offer effective and welcoming therapy.

**Keywords:** Obesity. Weight prejudice. Nutrition.

## INTRODUCTION

Obesity can basically be conceptualized as a disease characterized by the excessive accumulation of body fat, resulting from a positive energy balance (TAVARES, 2010). The World Health Organization (WHO) classifies it based on the body mass index (BMI), which relates body weight, in kilograms, and height, in meters. When the BMI is between 30 and 34.9 kg/m<sup>2</sup> the WHO defines the severity of the disease as grade I, between 35 and 39.9 kg/m<sup>2</sup> as grade II, and, finally, grade III when the BMI exceeds 40 kg/m<sup>2</sup> (WHO, 1995).

Obesity is a multifactorial disease, involving biological, historical, ecological, political, socioeconomic, psychosocial and/or cultural factors. Still, the most studied and commented factor is the biological one. In other words, related to lifestyle, aiming at physical activity and dietary intake (ABESO, 2016).

The World Health Organization states that obesity is one of the most serious health problems we have to face. By 2025, the estimate is that 2.3 billion adults around the world will be overweight, with 700 million individuals being obese, that is, with a body mass index (BMI) above 30. In Brazil, This chronic disease has increased by 72% in the last thirteen years, from 11.8% in 2006 to 20.3% in 2019 (MINISTRY OF HEALTH, 2020). The reality in Europe is no different, since the 1980s incidences have tripled. It is estimated that 53.6% of the Portuguese population is overweight or obese (GASPAR, 2012).

Obesity is directly related to quality of life. Studies demonstrate the relationship between obesity and other chronic non-communicable diseases (NCDs) such as high blood pressure, diabetes and cardiovascular diseases. In addition to these diseases, the perception of an obese individual's self-image can be distorted, causing low self-esteem and self-devaluation. Still regarding psychosocial complications, the feeling of social inadequacy, discrimination and

prejudice are commonplace and are classified as the biggest problems (TAVARES, 2010).

Obesity is often associated with laziness, dirt, stupidity, lies and ugliness. In this context, studies highlight the direct relationship between isolation, stress, depression and worsening of functional capacity and obesity (TAVARES, 2010).

Research shows that, in most cases, obesity is not seen as an illness, including the perception of health professionals and students (PUHL, HEUER, 2009). A cross-sectional study carried out by the Faculty of Public Health at USP (2015) evaluated attitudes of nutrition students towards obese people. This reported differences between sex, in which obese women suffer more discrimination and judgment than obese men. Furthermore, in one of the questions addressed, the students mentioned needing more patience and rigidity with such patients and that they would still feel greater discomfort when compared to eutrophic patients. The evaluation of the patients' diet, evaluated with a worse quality, was another data that confirmed the presence of prejudice, even when reported similar to that of a eutrophic patient. Such reports may interfere with nutritional behavior.

Due to the high importance of adequate nutritional management for such patients, Lewis et al. (1997) developed a test that aims to measure the prejudice present in different attitudes. The authors believe that, by accepting obese individuals, health professionals will be able to guide and help them with excellence.

In the context of obesity, stigma and prejudice do not contribute to the treatment and reduction of obesity rates and can also have several negative implications for the health of obese individuals. In this scenario, this study aimed to evaluate and compare the attitudes of university Nutrition students from Brazil and Portugal, in relation to obese individuals and obesity.

## METHODOLOGY

This is a cross-sectional study, with a sample composed of Nutrition course students regularly enrolled in private higher education institutions in Brazil and Portugal, of both sexes and aged 18 years or older. Students were recruited from social networks and email communications with the help of professors and researchers from partner higher education institutions in each country. Exclusion criteria included students under the age of 18, students enrolled in other university courses or students who responded incompletely to the questionnaire.

A questionnaire was prepared comprising socio-demographic questions, health conditions, lifestyle and nutritional status of students. The questionnaire used with students from Brazil and Portugal was the Anti-Obesity Attitude Scale, translated and adapted into Portuguese (OBARA; ALVARENGA, 2018). This scale has 34 items that address three dimensions of attitudes towards obesity and obese people: 1) Social and character depreciation, which assesses socially undesirable characteristics related to the personality and social contempt of the obese individual; 2) Physical and romantic unattractiveness, which includes items that reflect the perception that obese people are awkward and unacceptable as romantic partners; 3) Weight control and guilt, which includes items related to beliefs regarding the obese person's responsibility for their weight, with higher scores reflecting a greater belief that the weight of obese individuals is under their control rather than being under the greater influence of aspects biological.

Each Scale item was answered on a 5-point Likert scale. The score for each item on the Scale was added together, constituting the total score. This total score was divided by the number of statements in the questionnaire (total score / 34), to obtain the average score.

The score for each subscale was computed by summing the scores of the questions that make up the subscale, divided by the total number of questions (15 in the “Social and character depreciation” subscale; 10 in “Physical and romantic unattractiveness”; 9 in “Control of weight and guilt”).

Forms online platform and transferred to a Microsoft Excel spreadsheet and analyzed using the SPSS program, version 21. The results were evaluated by comparing the study variables between Nutrition students from Brazil and Portugal. Initially, the variables were analyzed in relation to adherence to normal distribution using the Kolmogorov -Smirnov test. The differences between the means of the total score, subscale scores (1, 2 and 3) and scores for each question were compared between the two countries (Brazil and Portugal) using the Mann-Whitney test. Other study variables, such as sociodemographic variables, health conditions, lifestyle and nutritional status were compared between countries to characterize the sample. All statistical analyzes considered a significance level of 5%.

All procedures in this research respected the guidelines of ethics legislation in research with human beings, guaranteeing the anonymity and confidentiality of the data collected. The research project was approved by the Research Ethics Committee (CEP) of Universidade Presbiteriana Mackenzie (CAAE 38439820.6.0000.0084), on November 10, 2020.

## RESULTS AND DISCUSSION

Data were collected from 286 students, but 1 did not accept to participate in the study, 10 were not university students, 8 did not respond about the undergraduate course they were studying, 73 were students from other Undergraduate Courses and 1 student from Angola, which resulted in a final sample

of 193 students enrolled in higher education institutions in Brazil and Portugal and enrolled in the Nutrition, Nutrition and Metabolism and Nutrition Science and Dietetics Courses.

The average age of the Portuguese was 21.75 years (sd =5.14) and that of the Brazilians was 23.44 years (sd =7.69), with no statistical difference. Table 1 presents the demographic characterization of the students, in which the majority are female (n=177) with no difference between countries and all are white in Portugal, which gave a statistical difference (p=0.002).

Regarding socioeconomic characteristics, the Portuguese and Brazilians are, for the most part, just students, but with a higher percentage of Brazilian students doing internships (p=0.021). Among the Portuguese, most parents had completed secondary education; Among Brazilians, parents had completed high school or higher education, as shown in Table 2.

The students were questioned about lifestyle characteristics (Table 3) and the majority performed physical activity (n=132), considered their level of physical activity active (n=77) and assessed their health status as good (n=117), with no statistical difference between nationalities.

Considering the practice of physical exercise, Oliveira and collaborators (2018) found in their study that 52% of nutrition students did not practice it, while Salvaro and Júnior (2009) also studied nutrition students and 81% said they were sedentary.

When analyzing the data related to the students' Undergraduate Nutrition course (Table 4), the majority studied in the morning in Brazil (n=82) and in Portugal the majority studied full time (n=46), with a statistical difference (p <0.001). Regarding the stage of the course, the majority of Portuguese were in the 6th stage and the majority of Brazilians were in the 7th stage, with a statistical

Variable		Portugal	Brazil	Total	p-value
Sex	Feminine	57	120	177	0.399*
	Masculine	3	13	16	
Race	white	60	101	161	0.002
	brown	0	16	16	
	black	0	8	8	
	yellow	0	7	7	
	others	0	1	1	

**Table 1** – Distribution of students according to demographic characteristics. Brazil, 2020-2021.

\*Fisher's exact test

Variable		Portugal	Brazil	Total	p-value
Work situation	Autonomous	0	3	3	0.021
	Scientific initiation or monitoring scholarship	0	8	8	
	Unemployed and looking for a job	0	1	1	
	Businessperson	0	3	3	
	Student (only)	53	81	134	
	moonlighting / free lancer	0	3	3	
	Doing an internship	6	26	32	
	Works as a contractor	1	8	9	
Mother's education	Complete elementary school	4	1	5	0.135
	Incomplete elementary education	0	7	7	
	Complete elementary school II	two	4	6	
	Incomplete elementary school II	5	9	14	
	Complete high school	12	33	45	
	Incomplete high school	5	6	11	
	Complete higher education	21	37	58	
	Incomplete higher education	5	17	22	
Postgraduate	6	19	25		
Father's education	Complete elementary school	5	6	11	0.030
	Incomplete elementary education	0	3	3	
	Complete elementary school II	6	9	15	
	Incomplete elementary school II	5	5	10	
	Complete high school	21	34	55	
	Incomplete high school	4	9	13	
	Complete higher education	16	31	47	
	Incomplete higher education	0	18	18	
Postgraduate	3	18	21		

**Table 2** – Distribution of students according to socioeconomic characteristics. Brazil, 2020-2021.

difference ( $p < 0.001$ ).

Anti-obesity attitudes were compared by country (Portugal and Brazil) of the educational institution where the students were enrolled. As a result, the averages of students in Portugal were higher than those in Brazil, with the exception of the statement that “fat people do not necessarily eat more than others” which had a higher average among Brazilians than among the Portuguese. Higher averages reflect more negative attitudes towards obesity, a higher result among Portuguese students (Table 5).

It can also be observed that positive questions regarding obesity, that is, refraining from prejudiced thoughts such as “if I were single, I would date a fat person”, “fat people have as much motor coordination as any other”, “fat people must be encouraged to accept themselves as they are” and “fat people do not necessarily eat more than others” have higher averages among Brazilians. With the exception of “society must respect the rights of fat people”, which has a higher average among Portuguese students.

It is interesting to note that a high average found in the present study was related to the question “fat people do not necessarily eat more than others”, which implements a nutritional view that obesity is not caused solely by high caloric intake. However, this can have a great contribution, as seen in the high average in the question “most fat people buy a lot of *junk food*”, foods with a high calorie content. The low average found in the question “the idea that genetics causes obesity is simply an excuse”, reaffirms that future nutritionists believe that genetics can indeed be an important factor in the development of obesity.

Cori and collaborators (2015) carried out a study with nutritionists and 76% of them agreed that eating inappropriate foods, such as *junk food*, is a factor in the development of

obesity, and 48% agreed with the genetic issue.

Analysis of the total score indicates that Portuguese students showed significantly higher averages compared to Brazilians, indicating more negative attitudes towards obesity. As for the subscales, a higher average was also observed among Portuguese students for questions related to “weight control and guilt”.

Maiman et al., in a pioneering way in 1979, examined attitudes of nutrition students at a conference in the United States and reported that 87% of those interviewed believed that obese people are indulgent, 74% believe that they have family problems and 32% believe that obese individuals lack willpower. Furthermore, 88% of the students interviewed stated that obesity would be a form of compensation for the lack of love and attention and 70% attributed the cause to emotional problems.

Another study by Oberrieder et al. (1995) examined the attitudes of American nutrition students and professionals and reported negative attitudes in both groups toward people with obesity. The results of this study demonstrate the importance of changing this scenario, as nutritionists find themselves in a position of influence in choices related to food and lifestyle in general.

Blumberg and Mellis (1980) evaluated medical and nursing students in the United States regarding prejudice against obese patients. In relation to personality, control and body image, many of the students classified individuals with morbid obesity negatively, using words such as unpleasant, strange and uncomfortable to characterize what care would be like for this group.

In conclusion, the present study showed that Portuguese students had more negative attitudes towards obesity when compared to Brazilians. In general, reasonably high averages were observed, indicating a tendency

Variable		Portugal	Brazil	Total	p-value
Practice of physical exercise	I do not practice	18	43	61	0.747
	I practice	42	90	132	
Reported level of physical activity	Active	24	53	77	0.604
	Very active	two	10	12	
	Not very active	22	40	62	
	Sedentary	12	30	42	
Assessment of health status	Good	34	83	117	0.647
	Very good	7	19	26	
	Too bad	1	1	two	
	I don't want to inform	0	1	1	
	I don't know	1	0	1	
	Regular	15	25	40	
	Bad	two	4	6	

**Table 3** – Distribution of students according to lifestyle characteristics. Brazil, 2020-2021.

Variable		Portugal	Brazil	Total	p-value
Study period	Full	46	20	66	<0.001
	Morning	3	82	85	
	Night	two	30	32	
	No reply	1	0	1	
Study stage	1st semester	two	31	33	<0.001
	2nd semester	8	5	13	
	3rd semester	1	9	10	
	4th semester	11	4	15	
	5th semester	3	15	18	
	6th semester	21	19	40	
	7th semester	0	35	35	
	8th semester	13	9	22	
	9th semester	0	6	6	

**Table 4** – Distribution of students according to characteristics of the Undergraduate course. Brazil, 2020-2021.

Questions	Portugal		Brazil		p-value
	Average	DP	Average	DP	
There is no excuse for being fat	<b>2.03</b>	0.92	1.65	0.96	<b>0.002</b>
If I were single, I would date a fat person	3.28	1.06	3.54	1.16	0.166
Most fat people buy a lot of <i>junk food</i> .	<b>3.18</b>	1.03	2.60	1.25	<b>0.002</b>
Fat people are not attractive	2.22	0.98	1.68	0.97	<b>0.000</b>
Fat people mustn't wear clothes that show too much of their body in public.	1.25	0.54	1.18	0.58	0.131
If fat people don't get hired for a job, it's their own fault	1.17	0.49	1.14	0.52	0.235
Fat people don't care about anything other than eating	1.22	0.56	1.14	0.50	0.133
I would lose respect for a friend who started to get fat	1.03	0.26	1.10	0.49	0.329
Most fat people are boring	1.05	0.29	1.08	0.36	0.699
I don't believe a normal weight person would marry a fat person	1.10	0.30	1.19	0.68	0.934
Society is very tolerant of fat people	1.70	0.72	1.62	1.02	0.058
When fat people exercise, they look ridiculous	1.02	0.13	1.05	0.28	0.434
Most fat people are lazy	<b>1.73</b>	0.92	1.46	0.75	<b>0.032</b>
Fat people are as competent at their jobs as anyone else	4.05	1.62	4.53	1.12	0.051
Being fat is a sin	1.07	0.41	1.08	0.36	0.711
It's disgusting to see fat people eating	1.07	0.31	1.07	0.35	0.711
Fat people don't have willpower	<b>1.55</b>	0.85	1.24	0.65	<b>0.002</b>
I prefer not to interact with fat people	1.05	0.22	1.19	0.54	0.113
Most fat people are temperamental and difficult to deal with	1.13	0.43	1.26	0.65	0.221
If bad things happen to fat people, they deserve it	1.02	0.13	1.02	0.19	0.938
Most fat people can't keep things clean and organized	1.08	0.33	1.14	0.49	0.655
Society must respect the rights of fat people	4.57	0.95	4.51	1.00	0.815
It's hard not to stare at fat people because they are unattractive	1.32	0.79	1.22	0.64	0.320
The idea that genetics cause obesity is simply an excuse	<b>1.97</b>	0.94	1.42	0.81	<b>0.000</b>
I would not continue a romantic relationship if my partner became fat	1.23	0.56	1.26	0.72	0.730
I don't understand how anyone can be sexually attracted to a fat person	<b>1.45</b>	0.77	1.22	0.64	<b>0.009</b>
If fat people knew how bad they looked, they would lose weight	<b>1.28</b>	0.64	1.14	0.51	<b>0.018</b>
Fat people have as much hand-eye coordination as anyone else	<b>3.33</b>	1.07	4.06	1.27	<b>0.000</b>
Fat people are unhygienic	1.08	0.28	1.11	0.46	0.733
Fat people must be encouraged to accept themselves as they are	3.50	1.19	3.79	1.14	0.095
Most fat people cling to any excuse for being fat.	<b>2.47</b>	1.08	1.66	0.94	<b>0.000</b>
It's hard to take a fat person seriously	<b>1.17</b>	0.62	1.04	0.26	<b>0.019</b>
Fat people don't necessarily eat more than others	3.28	1.25	<b>4.02</b>	1.27	<b>0.000</b>
<b>Total score</b>	<b>1.87</b>	0.20	1.81	0.22	<b>0.033</b>
<b>Subscale1 - Social and character depreciation</b>	1.56	0.18	1.60	0.24	0.965
<b>Subscale2 - Physical and romantic unattractiveness</b>	1.98	0.27	2.02	0.29	0.335
<b>Subscale3 - Weight control and guilt</b>	<b>2.25</b>	0.45	1.93	0.44	<b>0.000</b>

**Table 5** – Comparison of question means, subscales and total scale score according to the country of the educational institution. Brazil, 2020-2021.



towards prejudice against obese individuals on the part of nutrition students.

Therefore, the need for an adequate approach to the subject during Nutrition

training is identified, considering that Nutrition professionals play an important role in the treatment of these patients and must offer effective and welcoming therapy.

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