RBTCC Revista Brasileira de Terapia Comportamental e Cognitiva
e-ISSN: 1982-3541

2025, v. 25, pp. 1—13, e231803
Pesquisas originais

Symptoms of eating disorders and distortion/dissatisfaction with body size according to individual characteristics of nutrition students

Sintomas de transtornos alimentares e distorção/insatisfação com o tamanho do corpo segundo características individuais de estudantes de nutrição
Síntomas de trastornos alimentarios y distorsión/insatisfacción con el tamaño corporal según características individuales de estudiantes de nutrición

Thaís Moreira Machado, Mariana Kamimura, Beatriz Pizetta Ferronato, Wanderson Roberto da Silva, Luiz Felipe de Paiva Lourenção

Universidade Federal de Alfenas

Histórico do Artigo

Recebido: 10/04/2023.
1ª Decisão: 05/10/2023.
Aprovado: 15/02/2024.

DOI

10.31505/rbtcc.v25i1.1803

Correspondência

Luiz Felipe de P. Lourenção
luizfelipepaiva03@gmail.com

Escola de Nutrição, Universidade Federal de Alfenas (UNIFAL), R. Gabriel Monteiro da Silva, 700, Centro, Alfenas, MG, Brasil, 37130-001

Editor Responsável

Hernando Borges Neves Filho

Como citar este documento

Machado, T. M., Kamimura, M., Ferronato, B. P., da Silva, W. R., & Lourenção, L. F. P. (2025). Symptoms of eating disorders and distortion/dissatisfaction with body size according to individual characteristics of nutrition students. *Revista Brasileira de Terapia Comportamental e Cognitiva*, *25*, 1–13. https://doi.org/10.31505/rbtcc.v25i1.1803

Abstract

Due to the notoriety of specific beauty standards, nutrition students suffer pressure from society to follow them and this can influence eating behavior. The aim was to describe symptoms of eating disorders and distortion/dissatisfaction with body size among nutrition students and to analyze the relationship of these with participants' characteristics. This was a cross-sectional study with the application of an online questionnaire using the Eating Attitudes Test-26 (EAT-26), the Brazilian Silhouette Scale and items for sample characterization. Descriptive and analytical statistic were performed to verify the relationship among the variables. A total of 72 students (female=91.7%) with a mean age of 23.4±3.8 years participated in the study. The majority of them were from the middle economic class (58.3%), were classified as eutrophic (72.2%), attended the 9th period of the course and reported spending 2 to 4 hours a day on social media (66.7%). Based on the EAT-26 score, 34.7% of students showed symptoms of eating disorders, which was related to middle economic class and higher body mass index (BMI). All participants distorted their body size and most of them were dissatisfied. Individuals from a higher economic class distorted their body size more than those from the middle class. Women were more dissatisfied with their body size compared to men. In conclusion, the students presented symptoms of eating disorders and distortion/dissatisfaction with their body size and there were significant relationships between these variables and individual characteristics (sex, economic class, and BMI), which can be used in future protocols.

Key words: eating disorders, distortion, dissatisfaction, body size, students.

Resumo

Devido à notoriedade de padrões de beleza específicos, os estudantes de nutrição sofrem pressão da sociedade para segui-los e isso pode influenciar no comportamento alimentar. O objetivo foi descrever sintomas de transtornos alimentares e distorção/insatisfação com o tamanho do corpo entre estudantes de nutrição e analisar a relação desses com características dos participantes. Trata-se de um estudo transversal com aplicação de questionário on-line utilizando o Eating Attitudes Test-26 (EAT-26), a Escala Silhueta Brasileira e itens para caracterização da amostra. Foi realizada estatística descritiva e analítica para verificar a relação entre as variáveis. Participaram do estudo 72 estudantes (91,7% mulheres) com média de idade de 23,4±3,8 anos. A maioria era de classe econômica média (58,3%), foi classificada com eutrofia (72,2%), cursava o 9º período do curso e relatou passar de 2 a 4 horas por dia em redes sociais (66,7%). Com base na pontuação do EAT-26, 34,7% dos estudantes apresentaram sintomas de transtornos alimentares, o que foi relacionado à classe econômica média e maior índice de massa corporal (IMC). Todos os participantes distorceram o tamanho do corpo e a maioria estava insatisfeita. Os indivíduos de classe econômica alta distorceram mais o tamanho do corpo do que aqueles de classe média. As mulheres estavam mais insatisfeitas com o tamanho do corpo comparadas aos homens. Conclui-se que os estudantes apresentaram sintomas de transtornos alimentares e distorção/insatisfação com o tamanho do corpo. Relações significativas entre as variáveis e características individuais (sexo, classe econômica e IMC) foram encontradas, as quais podem ser utilizadas em protocolos futuros.

Palavras-chave: transtornos alimentares, distorção, insatisfação, tamanho do corpo, estudantes.

Resumen

Debido a la notoriedad de estándares de belleza específicos, los estudiantes de nutrición se ven presionados por la sociedad para seguirlos y esto puede influir en su comportamiento alimentario. El objetivo fue describir síntomas de trastornos alimentarios y distorsión/insatisfacción con el tamaño corporal entre estudiantes de nutrición y analizar su relación con las características de los participantes. Se trata de un estudio transversal que utilizó un cuestionario en línea utilizando el Eating Attitudes Test-26 (EAT-26), la Escala Brasileña de Silueta e ítems para caracterizar la muestra. Se realizaron estadísticas descriptivas y analíticas para verificar la relación entre las variables. Participaron del estudio 72 estudiantes (91,7% mujeres) con una media de edad de 23,4±3,8 años. La mayoría eran de clase económica media (58,3%), fueron clasificados como eutróficos (72,2%), estaban en el noveno período del curso y reportaron pasar de 2 a 4 horas diarias en las redes sociales (66,7%). Según el puntaje EAT-26, el 34,7% de los estudiantes presentaron síntomas de trastornos alimentarios, lo que se relacionó con la clase económica media y un índice de masa corporal (IMC) más alto. Todos los participantes distorsionaron su tamaño corporal y la mayoría estaban insatisfechos. Los individuos de una clase económica alta distorsionaron su tamaño corporal más que los de clase media. Las mujeres estaban más insatisfechas con su tamaño corporal en comparación con los hombres. Se concluye que los estudiantes presentaron síntomas de trastornos alimentarios y distorsión/insatisfacción con su tamaño corporal. Se encontraron relaciones significativas entre variables y características individuales (género, clase económica e IMC), que pueden ser utilizadas en futuros protocolos.

Palabras clave: trastornos de la alimentación, distorsión, insatisfacción, tamaño corporal, estudiantes.

Symptoms of eating disorders and distortion/dissatisfaction with body size according to individual characteristics of nutrition students

Thaís Moreira Machado, Mariana Kamimura, Beatriz Pizetta Ferronato, Wanderson Roberto da Silva, Luiz Felipe de Paiva Lourenção

Universidade Federal de Alfenas

Due to the notoriety of specific beauty standards, nutrition students suffer pressure from society to follow them and this can influence eating behavior. The aim was to describe symptoms of eating disorders and distortion/dissatisfaction with body size among nutrition students and to analyze the relationship of these with participants' characteristics. This was a cross-sectional study with the application of an online questionnaire using the Eating Attitudes Test-26 (EAT-26), the Brazilian Silhouette Scale and items for sample characterization. Descriptive and analytical statistic were performed to verify the relationship among the variables. A total of 72 students (female=91.7%) with a mean age of 23.4±3.8 years participated in the study. The majority of them were from the middle economic class (58.3%), were classified as eutrophic (72.2%), attended the 9th period of the course and reported spending 2 to 4 hours a day on social media (66.7%). Based on the EAT-26 score, 34.7% of students showed symptoms of eating disorders, which was related to middle economic class and higher body mass index (BMI). All participants distorted their body size and most of them were dissatisfied. Individuals from a higher economic class distorted their body size more than those from the middle class. Women were more dissatisfied with their body size compared to men. In conclusion, the students presented symptoms of eating disorders and distortion/dissatisfaction with their body size and there were significant relationships between these variables and individual characteristics (sex, economic class, and BMI), which can be used in future protocols.

Palavras-chave: eating disorders, distortion, dissatisfaction, body size, students.

Body image is a complex construct that involves a range of aspects of the assessment (e.g., thoughts and beliefs) and perception (e.g., shape and size) that individuals make about their bodies (Ainett et al., 2017; Cash & Smolak, 2011; Cornelissen et al., 2019). This image begins to be built in childhood and can be changed over time, thus following the beauty standards of each time, and can be influenced by various factors, such as the influence of friends, family, and media and also by the beauty standards imposed (Souza & Alvarenga, 2016; Grogan, 2016).

These standards have existed since ancient times, with ancient paintings showing voluminous bodies, and this body volume was considered healthy before the 19th century. The definitions of beauty standard can appear in several ways: “aesthetic culture of the Brazilian body”; “dictatorship of the body”; “body standard”; “a standardized body aesthetic”; “current standard of Western physical beauty” (Gois & Faria, 2021; Patrício et al., 2023).

Such standards are influenced mainly by the beauty industry, which makes people believe in defects that often do not exist, through advertisements or other means and thus seek a supposed product or procedure to correct them and consequently generate profit for the industry. This intensifies even more when the audience is women because unfortunately society still presents patriarchal and macho characteristics that end up dictating the standards (Craddock et al., 2022).

Moreover, to follow these standards, which are constantly changing, body dissatisfaction arises, which happens when the idea that the

individual has of the body does not match reality. Due to these idealized standards imposed mainly on women, which they unconsciously feel obliged to follow, aesthetic pressure is then created, characterized by the imposition of society to follow these standards that are imposed through the media, figures public, celebrities and fictional characters (Aparicio-Martinez et al., 2019).

Some population groups are more subject to this, such as actresses, models, young adults, athletes and students of health courses, e.g., nutrition. When these groups are engaged in social networks, the outcomes can be even worse, since the widespread beauty standard is often unrealistic (Ainett et al., 2017). Thus, low self-esteem, stress, social isolation and depression can emerge, contributing to the adoption of dysfunctional behaviors (e.g., the use of diuretics and restrictive diets) and leading to the emergence of eating disorders (EDs) and even aesthetic surgeries that have various risks (Cardoso et al., 2020).

EDs are psychiatric disorders that are characterized by changes in eating behavior and by the presence of excessive concern with weight and body shape, among the most common disorders are anorexia nervosa and bulimia (APA, 2014). Their development is multicausal and may be influenced by biological, genetic, psychological, sociocultural, and family components. The diagnosis of an eating disorder should be made by a qualified clinician (e.g., psychiatrist, psychologist); however, its treatment should be multidisciplinary, with the help of professionals such as nutritionists, physical educators, among others (Silva et al., 2021).

Of course, the concept of eating behavior goes far beyond just food intake, also encompassing cultural, social and psychological aspects (Alvarenga, 2023). With this in mind, eating behavior can be influenced by different factors, especially when a person experiences body dissatisfaction (Assis et al., 2020). Nutritionists are responsible for promoting health through healthy eating and, for this reason, it is common for them to be pressured by society to have a body within beauty standards (e.g., thin; muscular) and actions consistent with this. A study conducted in 2015, with 300 nutrition students of a University Center of Fortaleza showed a desire on the part of students for a thinner body, even being in a state of eutrophic (Bandeira et al., 2016). Such a desire may drive dysfunctional behaviors and favor the development of EDs.

Commonly, the majority of nutrition students are female and they feel constantly pressured to have a healthy diet and a fitness body; therefore, is a public potentially susceptible to EDs and negative body image (Paiva et al., 2017; Reis & Soares, 2017; Gomes et al., 2021). Furthermore, there is evidence showing that individuals with lower socioeconomic status are less susceptible to eating disorders (von dem Knesebeck et al., 2013) and dysfunctional strategies for body change (da Silva et al., 2020).

In light of the above, the aim of this study was to describe symptoms of EDs and distortion/dissatisfaction with body size among Brazilian nutrition students (from a public university located in the south of the state

of Minas Gerais) and to analyze the relationship of these with participants' characteristics (sex, economic class, and status weight). We hypothesized that the majority of students would present some degree of EDs and distortion/dissatisfaction with body size. Furthermore, we hypothesized that both symptoms of EDs and distortion/dissatisfaction with body size are related to individual characteristics (e.g., people from a high economic class presenting symptoms of EDs and body size dissatisfaction).

Method

This is a study quantitative with a cross-sectional design, carried out with students of the nutrition course of the Federal University of Alfenas (UNIFAL).

Participants

The study sample was composed of individuals of both sexes who were over 18 years old, able to answer an online questionnaire, and who were regularly enrolled in the nutrition course. As inclusion criteria, the participant must be a student on the nutrition course at UNIFAL-MG and over 18 years old.

Procedure

Data were collected online from June to July 2022. The online form (developed in the Google Forms) was sent via nutrition course students' institutional email. The recruitment of participants, via institutional email, was carried out through the email list of the respective students, provided by the Coordination of the Nutrition Course at UNIFAL. The form consisted of 4 stages, namely: i) Eating Attitudes Test-26 (EAT-26); ii) Brazilian Silhouette Scale; iii) questionnaire from Brazilian Market Research Association (ABEP) to obtain the participant's economic class; and iv) items for sample characterization including information on: biological sex (female; male), age (years), period of the course was attending at the time of the research, weight, height, time spent using social media such as Instagram (2-4 hours/day; 5-6 hours/day; >6 hours/day), feelings of pressure from society in relation to the body and eating due to being nutrition student (yes; no), practicing physical exercise (yes; no) and adhering to a restrictive diet (yes; no).

All students who agreed to participate in the study agreed to the Free and Informed Consent Form, which was available for download. The study was approved by the Ethics Committee of the UNIFAL (approval report number: 5.484.965).

Measures

The EAT-26 was used to evaluate symptomatology for EDs. EAT-26 is composed of 26 items with responses on a Likert-type scale. The score is calculated from the sum of the answers, ranging from 0 to 78 points.

Scores greater than 21 are considered indicative of eating behavior at risk for EDs (Garner et al., 1982; Rivas et al., 2010).

The Brazilian Silhouettes Scale, developed by Kakeshita et al., (2009), was used to investigate distortion/dissatisfaction with body size. The scale is composed of 15 figures representing body mass index (BMI) values ranging from 12.5 kg/m2 to 47.5 kg/m2 with a difference of 2.5 kg/m² between each figure. For that, the individuals answered three questions ("Which figure represents your current body?"; "Which figure represents the body you would like to have?"; "Which figure represents the ideal body?") indicating a figure from the Brazilian Silhouettes Scale. For analysis, we calculated the difference between the average BMI corresponding to the figure chosen as representative of the current BMI and the BMI calculated by the researchers. The body size distortion is performed by subtracting the current silhouette by the number corresponding to the real value silhouette, and if the score is zero it indicates that the individual has no body size distortion; if the score is positive, it indicates an overestimation of body size; and if the score is negative, it indicates an underestimation of body size. As for body size dissatisfaction, it is measured by subtracting the number corresponding to the silhouette that the participant would like to have, by the silhouette of the current image, where if the score is zero it indicates that the individual is not body size dissatisfied; if the score is positive, it indicates the desire to increase body size, and if the score is negative, it indicates a desire to decrease body size.

Statistical Analysis

The data were initially tabulated in a Microsoft Excel table® and the descriptive analyses of the study were performed. The absolute and percentage frequencies for categorical variables were calculated, as well as the measures of central tendency and variability for quantitative variables. ANOVA test was performed to verify the relation between the symptoms of EDs according to the participants' characteristics (i.e., sex: female and male; economic class: A = high, B = middle, C = low; and weight status: underweight, eutrophic, overweight/obesity). It is worth noting that the analyzed groups were independent. The homogeneity of variances was guaranteed by Levene's Test (p = 0.05-0.716). The multivariate normality of the data (considering the variables of interest) was also guaranteed from the skewness and kurtosis values that were less than 1.96. Chi-square test was used to verify the difference in proportions between dissatisfaction/distortion with body size and participants' characteristics. When there was significance, the adjusted standardized residuals (>|1.96|) were analyzed (using odds ratio [OR]) to show differences between groups. For the continuous variables (EAT-26 score, age, and BMI) Pearson correlations were performed. The significance level adopted was 5%. The IBM SPSS Statistics for Windows, version 25 (Armonk, NY: IBM Corp.) was used to perform the analyses.

Results

According to the Department of General Records and Academic Control, at UNIFAL, in 2022, there were 253 students enrolled in the nutrition course, 199 female (78.6%) and 54 male (21.4%). In the present study, 72 individuals participated, representing 28.5% of the total of students. The mean age of the total sample was 23.4±3.8 years. The average BMI of the participants was 22.7±3.8 kg/m2, with the majority of them being eutrophic (72.2%, n = 52). The majority of participants reported being female (91.7%, n = 66), attending the 9th period of the course (40.3%, n = 29) and being in the middle economic class (58.3%, n = 42). More details about the sample are presented in Table 1.

Table 1
Characterization of the sample.

Variable	n (%)
Sex	
Female	66 (91.7)
Male	6 (8.3)
Economic class	
A (high)	7 (9.7)
B (middle)	42 (58.3)
C (low)	23 (32.0)
Nutrition course period attended	
1st	6 (8.3)
3rd	1 (1.4)
5th	15 (20.8)
7th	21 (29.2)
9th	29 (40.3)
Status weight	
Underweight	6 (8.3)
Eutrophic	52 (72.2)
Overweight/Obesity	14 (19.5)

In relation to the other characteristics of the sample, the time spent using social media was 56.9% (n = 41) for use from 2 to 4 hours/day, followed by 33.3% (n = 24) for the use from 5 to 6 hours/day, and 9.7% (n = 7) for the use >6 hours/day. Most students (66.7%, n = 48) use about 2 to 4 hours/day on Instagram social media alone, and this same percentage said to compare to the posts that are eventually viewed on this social media. A total of 41.7% (n = 30) of participants reported having already been on a restrictive diet and 58.3% (n = 42) stated that they had changed their eating behavior to achieve some beauty standard. The majority of students reported practicing physical exercise (63.9%, n = 46) and of these, 39.7% reported exercising excessively. Furthermore, the majority of students (87.5%, n = 63) feel pressured by society to have a “good body” because they are nutrition students, and of these 8.3% (n = 6) have already stopped going to a social event to avoid food.

The results of the Brazilian Silhouette Scale are presented in Table 2. All students distorted their body size. The prevalence of distortion referring to the "perception of seeing oneself as bigger" was 79.2% (n = 57), being higher among women (80.3%). Regarding dissatisfaction, only 15.3% (n = 11) were satisfied with their current body size and 31.9% (n = 23) of the participants wished to lose weight. The prevalence of desire to gain weight was of 52.8% (n = 38).

Table 2
Body size distortion and dissatisfaction in the sample.

Category	n (%)		
	Total	Male	Female
Body size distortion			
Perception of seeing oneself as smaller	15 (20.8)	2 (33.3)	13 (19.7)
Perception of seeing oneself as bigger	57 (79.2)	4 (66.7)	53 (80.3)
Body size dissatisfaction			
Want to gain weight	38 (52.8)	3 (50.0)	35 (53.0)
Satisfied	11 (15.3)	3 (50.0)	8 (12.1)
Want to lose weight	23 (31.9)	-	23 (34.8)

About the EAT-26, 25 students (34.7%) had scores higher (>21 points), i.e., indicative of eating behavior at risk for EDs. The average EAT-26 score for total sample was 15.9±10.8 points. The relationship between symptoms of EDs according to the individual characteristics of the sample is shown in Table 3. Only the economic class was related to the symptoms of EDs ($p < 0.05$). People with a high economic class were more susceptible to symptoms of EDs.

Table 3
Symptoms of eating disorders according to participants' characteristics.

Variable	Mean (EAT-26)	Standard Deviation	p-value	F	df
Economic class					
A (high)	0.97 a	0.35	0.032*	3.631	2
B (middle)	0.61 a,b	0.42			
C (low)	0.50 b	0.37			
Sex					
Male	0.52	0.27	0.601	0.275	1
Female	0.62	0.42			
Weight status					
Underweight	0.40	0.26	0.225	1.523	2
Eutrophic	0.59	0.41			
Overweight/Obesity	0.76	0.45			

Note. EAT-26: Eating Attitudes Test-26, p-value, F statistic, and df (degrees of freedom) are derived from ANOVA test. ab: represents Tukey post-test where equal letters indicate statistical equality and different letters indicate statistical difference. * $p < 0.05$.

The difference in proportions of dissatisfaction/distortion with body size and individual characteristics is presented in Table 4. A significance was found between sex and body size dissatisfaction, showing that men were more satisfied than women (standardized adjusted residuals > 1.96, OR = 0.14). Also, a significance was found between economic class and body size distortion, showing that people who have medium income were less likely to distort body size than those with high income (standardized adjusted residuals >1.96, OR = 0.21).

Table 4
Differences in proportions between participants' characteristics (economic class: low/medium/high; sex: male/female; weight status: under/eutrophic/overweight) and dissatisfaction/distortion with body size (present/absent)

Variable	χ2 (df) p-value	
	Body size dissatisfaction	Body size distortion
Economic class	6.419 (2) 0.059	6.881 (2) 0.034*
Sex	6.097 (1) 0.042*	0.620 (1) 0.598
Weigh status	0.812 (2) 1.00	2.242 (2) 0.356

Note. χ2: chi-square, df: degrees of freedom, p-value derived from Fisher's Exact Test. * p < 0.05.

Finally, a positive and significant correlation was observed between EAT-26 score and BMI (r = 0.260, p = 0.028). The correlation between EAT-26 score and age was not significant (r = -0.040, p = 0.741).

Discussion

Body image is an important theme, leading to the understanding, by several professionals, as a figure containing shape, size, and appearance that the mind creates about the body itself, being built from experiences and sensations experienced throughout life and being influenced by social interactions. It has two dimensions: perceptual and attitudinal. The perceptive dimension is the judgment one makes about the body size, whereas the attitudinal can be divided into components, such as affective, behavioral and cognitive (Batista et al., 2015; Cash & Smolak, 2011; Grogan, 2016; Cornelissen et al., 2019; Silva et al., 2021).

Our findings showed that there is a relationship between sex and body size dissatisfaction. Among health students, the prevalence of EDs and negative body image is higher, especially for nutrition students who have direct contact with food and healthy lifestyle habits, feeling obliged to achieve a thin body dictated by society as the ideal body and often associating their body with professional success. Previous literature suggests that even being eutrophic some individuals still had the desire to change their

body, which can be a trigger for the development of SAD (Silva et al., 2021; Bandeira et al., 2016).

Also, we found (from the EAT-26) that 25 students (34.7%) showed indications of eating behavior at risk for EDs. Melo et al., (2020), when analyzing female students in the nutrition course, found that 27.3% of students showed a risk behavior for the development of EDs, highlighting that percentages above 20% are a worrisome factor, given the need for investigation of symptoms in these populations.

Dissatisfaction with body size is directly associated with the highest risk of developing EDs. It happens when the individual does not feel good about his/her body image, being influenced by the media, by comparison with other bodies, especially with the ideal body imposed by society. Many women associate weight loss with the solution to problems due to what they consume on social media, and this causes them to fall into the trap of restrictive diets, where weight loss occurs, but in an inappropriate and harmful way (Shuwen et al., 2019). On the other hand, the distortion with body size is the difference between the perceived body size and the real body size of an individual, that is, the individual perceives the body much larger or much smaller than it is (Santos et al., 2020).

The prevalence of body size distortion in the present study was 100%, while body size dissatisfaction was 79.2%. These findings are a warning that most people have some degree of negative body image and it is necessary to promote actions to improve their relationship with their body. Individuals from the high economic class had greater body size distortion, as well as symptoms of ED compared to individuals from the middle economic class. This suggests that income is an important characteristic in future assessments (Ainett et al., 2017; da Silva et al., 2020; von dem Knesebeck et al., 2013). Passos et al. (2020), when analyzing 12 studies in a systematic review, pointed out that several factors can influence the development of EDs, among them associations with socioeconomic status. People who have greater income can have easier access to information and products about the body and aesthetics; however, future studies should clarify this in other contexts, beyond young people.

Importantly, the scale used to evaluate body size dissatisfaction and distortion, the Brazilian Silhouettes Scale, is limited. The results obtained from this, only demonstrate if the participants are satisfied or dissatisfied with their bodies and if they perceive themselves as bigger or smaller. There are no parameters for evaluations of how far the distortion is considered evil or how far it is considered a slight deviation, thus making the data fragile before the analysis (Santos et al., 2020). Despite that, people who have a negative body image can develop different types of psychopathologies including EDs. Thus, a multidisciplinary approach is essential, especially in susceptible groups with nutrition studies. That said, it is important to discuss the topic in the academic environment to assist in professional training (Silva et al., 2021; APA, 2014).

As body dissatisfaction can be a reason to change eating habits, it is worth investigating people's behavior toward food (Silva et al., 2021). Eating behavior is complex to understand since there are several aspects in which the human being is inserted in the eating context, factors such as place, time, a company at meals, and socioeconomic conditions directly affect it (Alvarenga, 2023). Being the change in life stages an influential factor in modifying this behavior, such as entering academic life, can completely change the individual's routine, and in an attempt to fit in, food attitudes are affected (Espíndola et al., 2021).

Adequate food, as recommended by the Food Guide for the Brazilian Population, should provide the nutrients necessary for the maintenance and improvement of life. It is done as an orientation, that food is not based on the simple intake of nutrients, being important in all the social and cultural contexts involved at mealtime. That said, it is remarkable the importance of a diet rich in natural and minimally processed foods, rich in fruits and vegetables and with the control of ultra-processed foods, but it is also necessary the interaction during meals, the availability of these foods and how they are consumed (Brazil, 2014).

Moreover, a correlation between increased BMI and symptoms of EDs was found in this study. We know that the BMI is not the most satisfactory measure to judge the effectiveness of the treatment of EDs, even more, when we talk about anorexia nervosa. In other studies, it is more common for individuals with EDs to have BMI below eutrophic, but even in cases of BMI with values above the people may be at risk of EDs (Atti et al., 2021). This occurs because of several factors such as the shame about the body appearance, especially being a student of nutrition who is constantly judged both by colleagues and by society, and shame about their diet, because when a student of this area eats something considered unhealthy, he/she is judged by people who think that the food is not healthy and nutrition student should always eat healthily. These associations were found in recent studies (Nechita et al., 2021; O'Loghlen et al., 2022); however, more studies are encouraged.

Our study has limitations regarding the sample and the measures chosen. The sample did not present a high number of participants, due to the low adherence of the students in answering the online questionnaires. Another important limitation was the choice of the Brazilian Silhouette Scale to investigate body size dissatisfaction and distortion, given its fragility for classification of (in)adequate. However, we used the Silhouette Scale created in Brazil, which is commonly applied in different studies. Despite the limitations, it is noteworthy that the present study presents important data that can help in future protocols with nutrition students. Furthermore, we suggest that futures studies seek to evaluate the relationship of EDs symptoms and of distortion/dissatisfaction with body size with other people' characteristics and in other contexts.

Conclusions

An important part of the students presented symptoms of eating disorders and this variable was significantly related to economic class and BMI. Individuals who have high income and those with a higher BMI were more susceptible to adopting disordered eating behaviors. All students distorted their body size, with the majority indicating a larger size than their actual size. People from the middle economic class were less likely to distort their body size than those from the high class. Dissatisfaction with body size was prevalent among the majority of students who desired a larger body (e.g., high-definition muscle mass), and women were more likely to be dissatisfied. Our findings suggest that nutrition students may be susceptible to disorders related to eating and body image. Future actions aimed at mitigating dysfunctional attitudes can use our results to develop protocols that include characteristics such as sex, income and BMI when assessing body image and eating behavior.

References

Ainett, W. S. O., Costa, V. V. L., & Sá, N. N. B. (2017). Factors associated with body image dissatisfaction Nutrition students. *RBONE - Revista Brasileira de Obesidade, Nutrição e Emagrecimento*, *11*(62), 75–85.

Alvarenga, M. S. (2023). *Nutrição comportamental: ciência, prática clínica e comunicação* (1ª ed). Barueri, SP. Editora Manole.

American Psychiatric Association (APA). (2014). *Diagnostic and Statistical Manual of Mental Disorders: DSM-5* (5ª ed.). Porto Alegre, RS: Artmed.

Aparicio-Martinez, P., Perea-Moreno, A. J., Martinez-Jimenez, M. P., Redel-Macías, M. D., Pagliari, C., & Vaquero-Abellan, M. (2019). Social Media, Thin-Ideal, Body Dissatisfaction and Disordered Eating Attitudes: An Exploratory Analysis. *International journal of environmental research and public health*, *16*(21), 4177. https://doi.org/10.3390/ijerph16214177

Assis, L. C., Guedine, C. R. C., & Carvalho, P. H. B. (2020). Social media use and its association with dysfunctional eating behaviors in nutrition students. *Jornal Brasileiro Psiquiatria*, *69*(4), 220–227. https://doi.org/10.1590/0047-2085000000288

Atti, A. R., Mastellari, T., Valente, S., Speciani, M., Panariello, F., & De Ronchi, D. (2021). Compulsory treatments in eating disorders: A systematic review and meta-analysis. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *26*(4), 1037–1048. https://doi.org/10.1007/s40519-020-01031-1

Bandeira, Y. E. R., Mendes, A. L. R. F., Cavalcante, A. C. M., Arruda, S. P. M. (2016). Body image assessment of Nutrition course students from a private university center in Fortaleza. *Jornal Brasileiro Psiquiatria, 65*(2), 168–73. https://doi.org/10.1590/0047- 2085000000119

Batista, A., Neves, C. M., Filgueiras, J. F., & Ferreira, M. E. C. (2015). Attitudinal dimension of body image and eating behavior in undergraduates of physical education, nutrition and aesthetics in the city of Juiz de Fora - MG. *Journal of Physical Education*, *26*(1), 69–77. https://doi.org/10.4025/reveducfis.v26i1.23372

Brazil. Ministry of Health. Secretariat of Health Care. Departamento de Atenção Básica. (2014). *Guia Alimentar para a População Brasileira.* (2ª ed.). Brasília, DF. Ministério da Saúde. https://bvsms.saude.gov.br/bvs/publicacoes/guia_alimentar_populacao_brasileira_2ed.pdf

Brazilian Association of Research Companies (2022). *Criterion of economic classification Brazil*. https://www.abep.org/criterio-brasil

Cardoso, L., Niz, L. G., Aguiar, H. T. V., Lessa, A. do C., Rocha, M. E. de S., Rocha, J. S. B., & Freitas, R. F. (2020). Insatisfação com a imagem corporal e fatores associados em estudantes universitários. *Jornal Brasileiro de Psiquiatria, 69*(3), 156–164. https://doi.org/10.1590/0047-2085000000274

Cash, T. F., & Smolak, L. (2011). *Body Image: A Handbook of Science, Practice, and Prevention* (2ª ed.). The Guilford Press.

Cornelissen, K. K., Widdrington, H., McCarty, K., Pollet, T. V., Tovée, M. J., & Cornelissen, P. L. (2019). Are attitudinal and perceptual body image the same or different? *Evidence from high-level adaptation. Body image*, *31*, 35–47. https://doi.org/10.1016/j.bodyim.2019.08.001

Craddock, N., Spotswood, F., Rumsey, N., & Diedrichs, P. C. (2022). "We should educate the public that cosmetic procedures are as safe as normal medicine": Understanding corporate social responsibility from the perspective of the cosmetic procedures industry. *Body image*, *43*, 75–86. https://doi.org/10.1016/j.bodyim.2022.08.011

da Silva, W. R., Marôco, J., & Campos, J. A. D. B. (2020). Strategies for eating and body change among Brazilian women and men. *Trends in psychiatry and psychotherapy*, *42*(1), 16–29. https://doi.org/10.1590/2237-6089-2019-0010

Espíndola, B. H. S. G., Bittencourt, L. C., Lindolfo, M. L., Coêlho, M. D. G., & Ferreira, G. (2021). Food attitudes and body dissatisfaction in nutrition students from a private higher education institution enrolled in different course periods. *Research, Society and Development*, *10*(14), e248101421686. https://doi.org/10.33448/rsd-v10i14.21686

Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The eating attitudes test psychometric features and clinical correlates. *Psychological medicine, 12*(4), 871–878. https://doi.org/10.1017/s0033291700049163

Gois, Í. & Faria, A. L. de (2021). A cultura da magreza como fator social na etiologia de transtornos alimentares em mulheres: uma revisão narrativa da literatura. *Revista Ibero-Americana de Humanidades, Ciências e Educação*, *7*(1), 18. https://doi.org/10.29327/217514.7.1-12

Gomes, G.S.C.R., Paula, N.S., Castro, S.M.G., Souza, A.M., Souza, H.L.S., Martins, A.L.S., & Mallet, A.C.T. (2021). Transtornos alimentares e a influência das redes sociais na autoimagem corporal: um olhar sobre o papel do nutricionista. *Pesquisa, Sociedade e Desenvolvimento*, *10*(16), e191101623277. https://doi.org/10.33448/rsd-v10i16.23277

Grogan, S. (2016). *Body Image: Understanding Body Dissatisfaction in Men, Women and Children* (3ª ed.). Routledge. https://doi.org/10.4324/9781315681528

Kakeshita, I. S., Silva, A. I. P., Zanatta, D. P., & Almeida, S. S. (2009). Construction and test-retest reliability of Brazilian silhouette scales for adults and children. *Psicologia: Teoria e Pesquisa*, *25*(2), 263–270. https://doi.org/10.1590/S0102-37722009000200015

Melo, M. C. N., Oliveira, S. F., Moreira, P. V. L., & Lima, R. L. F. C. (2020). Assessment of risk behavior for eating disorders and body image disturbances in female college students. *Brazilian Journal of Health Sciences*, *24*(Suppl), 109–122. https://doi.org/10.22478/ufpb.2317-6032.2020v24nSupl.2.49743

Nechita, D. M., Bud, S., & David, D. (2021). Shame and eating disorders symptoms: A meta-analysis. *The International journal of eating disorders*, *54*(11), 1899–1945. https://doi.org/10.1002/eat.23583

O'Loghlen, E., Grant, S., & Galligan, R. (2022). Shame and binge eating pathology: A systematic review. *Clinical psychology & psychotherapy*, *29*(1), 147–163. https://doi.org/10.1002/cpp.2615

Paiva, A., Lopes, M., Lima, S., Cruz, K., Rodrigues, G., & Carvalho, C. (2017). Body image perception and nutritional status in female nutrition undergraduates from a public university. *DEMETRA: Food, Nutrition & Health*, *12*(1), 193–206. https://doi.org/10.12957/demetra.2017.22483

Passos, J. C., Sousa, C. R. N., Silva, M. S., Viana, L. T. M., Freitas, B. J. S. A., Brandão, A. C. A. S., & Araújo, R. S. R. M. (2020). Influence of eating disorders in young females. *Research, Society and Development*, *9*(8), e589985897. https://doi.org/10.33448/rsd-v9i8.5897

Patrício, P. A. L., Laus, M. F., Almeida, S. de S., & Braga Costa, T. M. (2023). Comparison of Female Body Image Between Models and Non-Models Women. *Paidéia (Ribeirão Preto)*, *33*, e3309. https://doi.org/10.1590/1982-4327e3309

Reis, A. S., & Soares, L. P. (2017). Nutrition students present risks for eating disorders. *Brazilian Journal of Health Sciences*, *21*(4), 281–290. https://doi.org/10.22478/ufpb.2317- 6032.2017v21n4.29881

Rivas, T., Bersabé, R., Jiménez, M., & Berrocal, C. (2010). The Eating Attitudes Test (EAT- 26): reliability and validity in Spanish female samples. *The Spanish journal of psychology*, *13*(2), 1044–1056. https://doi.org/10.1017/s1138741600002687

Santos, A., Silva, W. R., Santana, M. S., Campos, J. A. D. B. (2020). Distortion and dissatisfaction with body size per the demographic and academic characteristics and the nutritional status of university students. *Revista de Ciências Farmacêuticas Básica e Aplicada*, *41*, e665. https://doi.org/10.4322/2179-443X.0665

Shuwen, Q., Ordoñez, A. M., Fernandes, I. (2019). Occurrence of body dissatisfaction, inappropriate eating behaviors, and media pressure in female college students from different fields of study. *TCC-UniAmérica Digital Library*, 1–27. https://pleiade.uniamerica.br/index.php/bibliotecadigital/article/view/593/690

Silva, J. A., Lopes, S. O., Cecon, R. S., & Priore, S. E. (2021). Comportamento de risco para transtorno alimentar em universitárias de Viçosa-MG. *Revista da Associação Brasileira de Nutrição - RASBRAN*, *12*(2), 119–132. https://doi.org/10.47320/rasbran.2021.1302

Souza, A. C., & Alvarenga, M. S. (2016). Body image dissatisfaction in college students - An integrative review. *Brazilian Journal of Psychiatry*, *65*(3), 286–299. https://doi.org/10.1590/0047-2085000000134

von dem Knesebeck, O., Mnich, E., Daubmann, A., Wegscheider, K., Angermeyer, M. C., Lambert, M., Karow, A., Härter, M., & Kofahl, C. (2013). Socioeconomic status and beliefs about depression, schizophrenia and eating disorders. *Social psychiatry and psychiatric epidemiology*, *48*(5), 775–782. https://doi.org/10.1007/s00127-012-0599-1