



Body image and (dis)satisfaction among nutrition students

La imagen corporal y la (in)satisfacción entre los estudiantes de nutrición

Helena Alves de Carvalho Sampaio¹
Nara de Andrade Parente²
Antonio Augusto Ferreira Carioca²
Diana Jiménez-Rodríguez³

¹ Universidade Estadual do Ceará, Programa de Pós-graduação em Saúde Pública. Fortaleza, CE, Brasil.

² Universidade de Fortaleza, Curso de Graduação em Nutrição. Fortaleza, CE, Brasil.

³ Universidad Católica de Murcia, Curso de Enfermería. Murcia, España.

Correspondence
Nara de Andrade Parente
E-mail: naradeandrade@gmail.com

Abstract

Aim: Evaluating the correlation between body image and real/ desired anthropometric measurements of Nutrition students as potential risk factor for the development of eating disorders. *Methodology:* Nutrition students from a public university were assessed through anthropometric measurements and through the application of the Body Shape Questionnaire. *Results:* There was high prevalence of normal weight and no-dissatisfaction with body image (89.5%). On the other hand, only 14 (12.3%) students were satisfied with their weight. *Discussion:* Worrying too much about body image and dissatisfaction can lead to low self-esteem, as well as affect students' performance and their future professional practice. *Conclusion:* Despite the low prevalence of dissatisfaction with body image, the high rate of dissatisfaction with the current weight is a concerning factor because it can increase the risk of having individuals developing future disorders and overvaluing beauty in detriment of health, which may reflect on their future professional practice.

Keywords: Body image. Students. Eating disorders.

Resumen

Objetivo: Evaluar la correlación entre la imagen corporal y las mediciones antropométricas reales y las indicadas como deseadas en alumnos de Nutrición como un factor de riesgo potencial para el desarrollo de trastornos de la alimentación. *Metodología:* Los estudiantes de Nutrición de una universidad pública fueron evaluados por antropometría y se les aplicó el cuestionario Body

Shape Questionnaire. *Resultados:* Se encontró una alta prevalencia de peso normal y sin insatisfacción en la imagen corporal (89,5%), pero sólo 14 (12,3%) estaban satisfechos con su peso. *Discusión:* Preocuparse demasiado por la imagen y la insatisfacción puede conducir a una baja autoestima, interferencia en sus estudios y en su futura práctica profesional. *Conclusión:* Aún con la baja prevalencia de insatisfacción en la imagen de sí mismo, esa alta tasa de insatisfacción con el peso actual es preocupante ya que ambos pueden aumentar el riesgo de perturbaciones futuras, una excesiva apreciación de la belleza a costa de la salud y que se refleje en su futura práctica profesional.

Palabras clave: Imagen corporal. Estudiantes. Trastornos de la conducta alimentaria.

Introduction

Body image is a significant component of individuals' personal identity, since it is the way the body presents itself to them. Body image is divided in two components: perception and attitude, which refer to the image built in ones' mind and to the feelings, thoughts and actions taken by individuals based on their body image, respectively.¹⁻³

Body dissatisfaction is associated with depressive symptoms, stress, low self-esteem, intense food restriction and avoidance of physical activities, fact that reinforces the importance of evaluating this parameter. Women present higher body dissatisfaction degree and are more often affected by eating disorders than men.³

Studies have shown association between body image and the development of eating disorders (EDs). The genesis of these disorders has multifactorial etiology: there is the hypothesis that the combined influence of family dynamics, environment and cultural aspects of one's personality work as competing factors for the predisposition, onset and persistence of such disorders.⁴

Professionals whose performance is associated with excessive concern about weight or body shape such as athletes, models, actresses and nutritionists stand out among the groups most subjected to the risk of developing EDs. Thus, university students pursuing careers, such as Physical Education and Nutrition, in which physical appearance is important, deserve special attention.^{2,5} It is known that Biological Sciences and Health students are subjected to high stress levels due to excessive work load, curricular and extracurricular activities, as well as to self-demand for belonging to a field associated with diet, nutrition and body composition care. Consequently, this population can present high prevalence of eating disorders.⁶

Thus, studies have investigated whether future nutritionists, who are mostly young women, may be more susceptible to develop eating disorders, since they are constantly concerned about body image, overweight and diets.⁶⁻⁸

If one takes into consideration the herein described scenario, it is possible saying that university students, mainly female Nutrition students, deserve special attention with respect to investigations focused on their self-perception about body image. Therefore, they were the group of choice in our study, since they were considered the most vulnerable individuals based on their career and gender. This type of research can help preventing the development of EDs among them, as well as better understanding the relationship between professional training and future practice, since direct actions can help them clearly see the link among EDs, body image disorders and excessive concern about physical shape. The aim of this study was to evaluate the correlation between body image and the real/desired anthropometric measurements of Nutrition students.

Methodology

We herein performed a descriptive and quantitative study, whose target population comprised Nutrition students from a public university in Ceará State (Brazil). According to a survey conducted in the first semester of 2011, the aforementioned course comprised 152 students distributed in nine academic semesters: 87 students enrolled in the initial academic semesters (1st to 4th) and 65 in the professional practice ones (5th to 7th).

Our sample comprised all students who met the inclusion criteria: belonging to the age group 18 to 30 years and being enrolled between the 1st and 7th academic semesters (the 8th and 9th semesters represent extramural studies, unless the student is at the site for review). The exclusion criteria were: not meeting any of these requirements and being diagnosed with ED or pregnant. One hundred and thirty-three (133) students met the inclusion criteria and were invited to participate in our study. One hundred and forty (85.7%) of them agreed to participate in it and signed the consent form. The mean age of the students was 21 (2.6) years. Data collection was carried out from April to September 2011, after the study was approved by the Ethics Committee on Human Research.

Students were approached in the classrooms. Those who agreed to participate in the data collection process were scheduled for individual interviews and anthropometric examinations at the laboratory. The collected information comprised age, course enrollment year, current weight, ideal weight (according to the interviewee), height, ideal height (according to the interviewee) and body mass index - BMI (weight in kg/height in m²). Weight and height were measured in a digital scale equipped with Balmac® anthropometer (150 kg weight capacity, 50 g precision; 2.13 m height, 0.5 cm precision) - individuals were placed in standing position, barefoot and wearing light clothing. Ideal weight and height were obtained through the following question: "Based on

your measured weight and height, what do you consider to be the ideal values for your body?” Nutritional status was set based on students’ body mass index, according to the World Health Organization - WHO.⁹

The Body Image Questionnaire, which is the Portuguese version of the Body Shape Questionnaire (BSQ) validated by Di Pietro & Silveira,¹⁰ was used to investigate students’ body image. The questionnaire comprises 34 questions to be answered by the students based on answers ranging from “never” (equivalent to 1) to “always” (equivalent to 6). Scores can range from 34 to 204, whereas distortion categories range from “no” (≤ 110 points), “slight” ($> 110 \leq 138$ points), “moderate” ($> 138 \leq 167$ points) and “severe” (> 167 points). The self-administered questionnaire was individually applied to students who were previously informed about the instrument. The answers should be based on information about the previous four weeks, according to instructions provided by the instrument authors.

Data were analyzed based on the comparison between students enrolled in the initial and professional academic semesters. We made the option for dividing the groups this way because, according to Laus, Moreira & Costa,⁵ senior students show different eating habits from junior students. Data analysis was applied to mean BMI, real and ideal nutritional status and BSQ score, after they were subjected to the Kolmogorov-Sminorv test. Data were subjected to statistical Student’s t-test, Chi-square test or Fisher Pearson’s exact test. Multiple linear regression models were determined. P value < 0.05 was considered significant. All analyses were performed in the Statistical Package for Social Sciences (SPSS) version 15.0. With respect to the BSQ scores, categories such as slight, moderate and severe were grouped as “present” distortion and compared to the “absent” category for statistical analysis purposes.

Results

Sixty (52.6%) out of the 114 investigated students were enrolled in the first academic semesters (1st to 4th) and 54 (47.4%) were enrolled between the 5th and 7th ones (students performing care practices). Students’ mean age was 21.7 (2.6) years.

Mean weight was 56.6 (7.6) kg (minimum = 40.3 kg and maximum = 88 kg), whereas mean height was 1.60 (0.1) m (minimum = 1.48m and maximum = 1.72 m). Mean BMI was 21.8 (2.5) kg/m² (minimum = 16.7 kg/m² and maximum = 30.5 kg/m²).

There was no significant difference ($p = 0.677$) between the mean BMI of students enrolled in the first academic semesters (1st to 4th) - 21.8 (1.8) kg/m² - and that of six students enrolled in professional practice disciplines (5th to 7th semesters) - 21.8 (1.5) kg/m².

Based on students' nutritional status, which was classified through their BMI, most of them (84.2%) were eutrophic (Table 1).

Table 1. Student distribution according to nutritional status, body mass index (BMI) and academic semester. Ceará, 2011.

	Semesters 1 - 4		Semesters 5 - 7		Total	
Nutritional Status*	n	%	n	%	n	%
Underweight	0	0	7	13.0	7	6.1
Eutrophic	55	91.7	41	75.9	96	84.2
Overweight	4	6.7	6	11.1	10	8.8
Obesity	1	1.6	0	0	1	0.9

*According to WHO (1995).

The ideal weight, according to students' viewpoint, was lower than their real weight (mean weight 55 (5.1) kg), whereas their desired height was higher than the real one (mean height 1.65 (0.05) m). The desired body mass index was lower than the real one – mean BMI 20.4 (1.68) kg/m². The mean difference between real and ideal weight was -1.5 (4.1) kg. There were differences between real and ideal height ($p < 0.001$), between real and ideal weight ($p < 0.001$), and between real and ideal BMI ($p < 0.001$).

Sixty-three (55.3%) out of the 114 evaluated students would like to weigh less, 37 (32.5%) would like to weigh more and 14 (12.3%) were satisfied with their current weight. As for ideal height, 33.3% of students wanted to be taller, 0.9% wanted to be shorter and 65.8% were satisfied with their height.

There were no significant differences ($p = 0.122$) between the mean BMI of students enrolled in the first academic semesters (1st to 4th) - 20.5 (1.8) kg/m² - and that of students enrolled in professional practice disciplines (5th to 7th semesters) - 20.3 (1.5) kg/m². Table 2 shows students' nutritional status based on their ideal weight and height: there was no significant significant difference ($p = 0.619$) between junior (1st to 4th semesters) and senior (5th to 7th semesters) students.

According to the body image evaluation conducted through the BSQ questionnaire, there were no differences between groups (Table 3).. The mean score in this questionnaire was 75.0 (23.2) points (minimum = 37 and maximum = 146 points). The mean score of students enrolled in the first academic semesters (1st to 4th) was 77.7 (24.3) points, whereas those enrolled in the 5th to 7th

semesters recorded 72.1 (22.0) points. There was no significant difference ($p = 0.199$) between groups of academic semesters.

There was moderate correlation ($r = 0.505$, $p < 0.001$) between BSQ scores and measured BMI (positive data), i.e., they increased together and formed an ascending line on the scatterplot (Figure 1). Based on the association between these two variables, it is possible saying that this correlation resulted from the large amount (69.9%) of negative results recorded for low-weight eutrophic students and not for obese and overweight students who recorded higher scores in the BSQ.

A multiple linear regression model was used to predict BSQ scores based on students' age and BMI and generated a significant adjusted model: $R = 0.424$, body mass index [$B = 4.657$ 95% CI: 3.153; 6.161 ($p < 0.001$)] and age [0.034 $B = 95\%$: -1.425; 1.493] ($p = 0.963$) were independent variables.

Table 2. Student distribution based on optimum nutritional status, body mass index (BMI) and academic semester. Ceará, 2011.

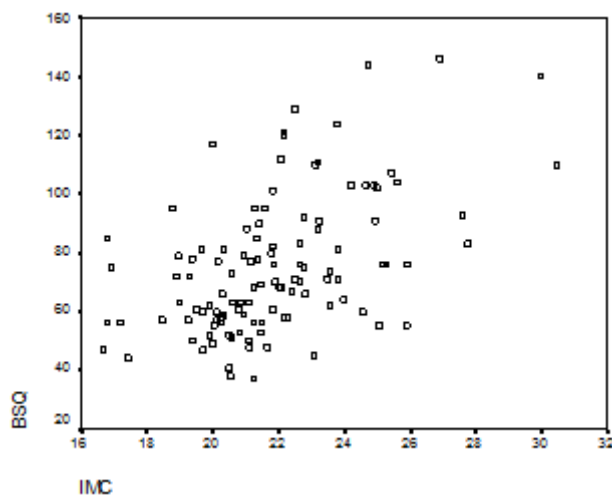
Nutritional Status *	Semesters 1 - 4		Semesters 5 - 7		Total	
	n	%	n	%	n	%
Underweight	6	10	7	13	13	11.4
Eutrophic	54	90	47	87	101	88.6

*According to WHO (1995)

Table 3. Student distribution according to body image survey score. Ceará, 2011

Dissatisfaction with body image *	Semesters 1 - 4		Semesters 5 - 7		Total	
	n	%	n	%	n	%
Absence	53	88.3	49	90.7	102	89.5
Presence	7	11.7	5	9.3	12	10.5

* According to categorization scores in the translated version of the BSQ - Body Shape Questionnaire.



Graph 1. Correlation between BSQ and BMI of the evaluated students. Ceará, 2011.

Discussion

Our findings were herein discussed based on three main contexts: the first context compared our findings to those of similar studies; the second focused on the daily influence of ideal body on students' lives; and finally, the third one focused on the psychological consequences of body dissatisfaction. Based on the last two contexts, the evaluated variables (ideal body and psychological consequences of body dissatisfaction) may have a potential impact on students' professional practice, since they will work with body image, beauty and health.

Results showed overall dissatisfaction with weight among students. Most of them reported desired weight lower, or higher, than their real weight. The difference between ideal and real weight (-1.5 [4.1] kg) was slightly lower among our students than among students evaluated in other studies, such as the one conducted by Bosi, Luiz, Morgado, Costa & Carvalho.¹¹ The aforementioned authors investigated Nutrition students from a public university in Rio de Janeiro and recorded 2 kg difference between ideal and real weight. Bosi, Luiz, Uchimura & Oliveira¹² found 2.2 kg difference between ideal and real weight in Physical Education students from a public university in Fortaleza (Brazil).

Similar to the study by Bosi et al.,¹¹ who recorded mean ideal height 166.3 (5.5) cm, students evaluated in our study reported desired height equal to, or higher than, the mean real height 1.64 (0,5) m. However, the difference between mean real and optimum height recorded by Bosi et al.¹¹ was higher than 2.7 cm, whereas the one recorded in our study was 0.03 cm.

There was prevalence of overweight and obesity among the evaluated students, although it was low. However, these classifications disappeared in the idealized values. Students' ideal BMI revealed priority given to low, or normal, birth weight contexts, which highlighted the preference for thinner bodies in this group. Our results corroborate a study carried with university students in Spain in 2003,¹³ whose findings showed difference between real (57.60 kg) and ideal (54.56 kg) weight in 70 % of the evaluated individuals, who wanted to weigh less. The study also showed dissatisfaction with physical appearance in 84.2% of students, even in the eutrophic ones.

Real body mass index values (mean = 21.8 kg/m²) recorded in the current study were also similar to the ones found by Garcia, Castro & Smith¹⁴ in Dietetics students from a public university in Porto Alegre. Our results confirmed the hypothesis of different nutritional status among university students in the health field. According to the *Household Budget Survey* (HBS 2008-2009¹⁵), 48.1% of women in the age group 20 years (or older) are eutrophic; however, our study recorded 84.2% prevalence of eutrophic women (same age group) in the herein evaluated population. Psychology students evaluated in the study by Secchi, Camargo & Bertoldo¹⁶ recorded mean BMI value of approximately 22 kg/m²,

Physical Education students recorded mean BMI 21.5 kg/m² and Fashion students recorded approximately 21.6 kg/m². The aforementioned authors emphasized the relationship between BMI and body dissatisfaction - since the higher the body mass index, the lower the body satisfaction - although dissatisfaction was recorded for students in all evaluated university courses. A study conducted with first-year female students enrolled in the same course in South Africa¹⁷ recorded mean BMI 21.8 (2.6) kg/m². A study conducted with female university students in France¹⁸ recorded mean BMI 21.1 (2.9) kg/m², whereas another one conducted in Spain¹⁹ recorded 21.2 kg/m².

Based on the BSQ, the current study recorded high prevalence of dissatisfaction with body image (89.5%). This prevalence was higher than that of other studies based on the same instrument. García, Castro & Smith¹⁴ found 60.5% prevalence of body dissatisfaction among Dietetics students from a public university in Porto Alegre, whereas Bosi et al.¹¹ recorded 59.6% prevalence of body dissatisfaction among Dietetics students from a public university in Rio de Janeiro. Laus, Moreira & Costa⁵ recorded 42% prevalence of body dissatisfaction among Dietetics students, 35% among Physical Education students, 47% among Advertising students and 35% among Business Administration students.

Bosi et al.¹¹ recorded mean BSQ score 81.2 (33.6) points, which was higher than the one recorded in the present study - 75 (23.3) points. Laus, Moreira & Costa⁵ recorded significant mean BSQ score for Nutrition and Physical Education students (90.2 (4.3) points), as well as for Advertising and Business Administration students (82.4 (4.0) points). First-year students in South Africa¹⁷ recorded mean BSQ score 87.7 (32.2) points. These outcomes showed that students in the health field recorded higher body image dissatisfaction scores than students in other fields.

It was difficult comparing our results to the ones recorded in other studies published in Brazil, since we adopted the most recent version of the questionnaire validated to be applied to university students in our country,¹⁰ which was used as reference in the analysis of our results. Di Pietro & Silveira¹⁰ also conducted a study with Brazilian Nutrition students using different bases, which provided different cutoff points. Therefore, studies have used the following cutoff points: “No” (34-80 points), “slight” (81-110 points), “moderate” (111-140 points) and “severe” (141-204 points) dissatisfaction with body image. If this classification had been used in our study, the “absent” category would have been reduced to 67.5% (data not shown), besides presenting higher similarity than the findings of the aforementioned studies.

These findings suggested the appreciation of beauty at the expense of health among Nutrition students. It is essential investigating other associated factors such as current EDs, current diet and physical activity status. We wonder if there is commitment to eating patterns and to healthy physical activity in the pursuit of the desired body.

Dissatisfaction with body image and weight reflects the contemporary and complex ideal of beauty, which is based on the “physical perfection” triad: youth, beauty and health.²⁰ According to Novaes,²¹ the body image celebrated in dominant cultures values youth, beauty, the appearance of happiness, the power of sexual attraction and the frenzied attempt to slow aging.

The aforementioned patterns were built throughout history, since every period, and the events that took place in each of them, influenced the formation of the ideal body image. The 19th century valued “chubby” women, who were beautiful and elegant because their hourglass-type bodies looked perfect in corsets. Later, slim female bodies became the symbol of elegance associated with health; consequently, women began to practice sports and participate in several outdoor activities.²⁰

The twentieth century consolidated the pursuit of the slim body associated with beautification practices based on the use of creams, vitamins, silicone and collagen. Thus, efforts have been made to combine health and well-being (physical exercises and healthy life) in order to get a permanently-young body. Therefore, beauty and fashion standards were converted into longilinear, agile and flexible bodies, and into low-cut dresses and straight-cut clothes, respectively.²²

From the 1920s to the 40s, women were encouraged to do outdoor activities, to wear more revealing clothes and to define their muscles through physical exercises. In the 1950s, television and movies marginalized ugly and fat women.²³ The 1960s brought freedom of customs.²⁴ Barbies, fitness equipment and body became business in the 1970s. According to Sylvie Malisse, women are held responsible for their own aging.²⁰ The idea of body building - i.e., the idea of a body that can be shaped and built by the individual - prevails since the 1980s.²⁴

In light of the foregoing, it is possible saying that, beyond health issues, the current “fashion” is influenced by the media and social networks to pursuit the perfect body based on the current concept of beauty. Individuals are held responsible for not getting the perfect body.

All this pressure certainly affects people’s self-image and self-esteem, besides having psychological impact on them. Siqueira & Queiroz²⁵ addressed the “*Theory of Spectacle*” experienced nowadays, in which people prefer the image to the thing, i.e., *appearance* is more important than being. It led to an increasingly individualistic society, where individuals go through processes in which everything depends on themselves. Thus, according to the herein investigated students, it is essential presenting the body image of a perfect nutritionist successfully adapted to the current beauty standards.

Based on the relationship between self-image and self-esteem addressed in the study by Van Den Berg et al.,²⁶ the herein evaluated group of students is in adolescence. According to the aforementioned study, low self-esteem and body dissatisfaction in early life can lead to a series of adverse health outcomes such as unhealthy weight control behaviors, different eating disorders, overall psychological stress and several other negative issues. Factors such as age, sex, body weight and race/ethnicity were related to body dissatisfaction and low self-esteem; overweight, female and white individuals showed higher body dissatisfaction levels in late adolescence. Thus, it is essential conducting studies to identify populations at risk of developing such issues and prevent the emergence of cases.

Excessive concern about body image and body dissatisfaction can lead to low self-esteem, as well as affect students’ performance and their future professional practice. As these students get closer to become nutritionists, how will they address these very same conflicts in their patients? Or worse, would they project this need of achieving a perfect body image on their patients?

Conclusion

The topics addressed in our study should be further discussed to enable reflecting about what to do in different life environments to minimize the herein indicated potential negative impacts on students in the health field.

BSQ results showed low prevalence of dissatisfaction with body image, although the high dissatisfaction with weight made our findings worrisome. In addition to the health issues of these students, special attention should be given to the possibility of having their current situation affecting their professional practice after they graduate. To what extent can dissatisfaction with weight and body image, and the effort to change this image, make these professionals adopt the

same inadequate weight control behaviors adopted by their patients? The importance of this issue has been underestimated, since few national studies have investigated the body image of this population and literature lacks studies focused on investigating the interrelation between these concepts and professional behavior.

Contributors

Sampaio HAC participated in the elaboration of the study and helped writing the article and its last version; Parente NA participated in all stages of the study, from its elaboration to the revision of the last version of the article. Carioca AAF participated in data analysis and interpretation; Jiménez-Rodríguez D participated in the elaboration of the study and helped writing the article and its last version.

Conflict of interest: The authors declare no conflict of interests.

References

1. Kakeshita IS, Almeida SS. Relação entre índice de massa corporal e a percepção da auto-imagem em universitários. *Rev Saúde Pública*. 2006; 40(3):497-504.
2. Gonçalves TD, Barbosa MP, Rosa LCL, Rodrigues AM. Comportamento anoréxico e percepção corporal em universitários. *J Bras Psiquiatr*. 2008; 57(3):166-170.
3. Alvarenga MS, Philippi ST, Lourenço BH, Moraes Sato P, Scagliusi FB. Insatisfação com a imagem corporal em universitárias brasileiras. *J Bras Psiquiatr*. 2010; 59(1):44-51.
4. Silva JD, Silva ABJ, Oliveira AVK, Nemer ASA. Influência do estado nutricional no risco para transtornos alimentares em estudantes de nutrição. *Cienc Saúde Coletiva*. 2012; 17(12):3399-3406.
5. Laus MF, Moreira RCM, Costa TMB. Diferenças na percepção da imagem corporal, no comportamento alimentar e no estado nutricional de universitárias das áreas de saúde e humanas. *Rev Psiquiatr. RS*. 2009; 31(3):192-196.
6. Pires R, Pinto J, Santos G, Santos S, Zraik H, Torres L, et al. Rastreamento da frequência de comportamentos sugestivos de transtornos alimentares na Universidade Positivo. *Rev Med*. 2010; 89(2):115-123.
7. Penz LR, Bosco SMD, Vieira JM. Risco para desenvolvimento de transtornos alimentares em estudantes de Nutrição. *Sci Med*. 2008; 18(3):124-128.
8. Kirsten VR, Fratton F, Porta NBD. Transtornos alimentares em alunas de nutrição do Rio Grande do Sul. *Rev Nutr*. 2009; 22(2):219-227.

9. World Health Organization. Physical status: the use and interpretation of anthropometry. Geneva: WHO; 1995. 434 p. Technical report series, n. 854.
10. Di Pietro M, Silveira DX. Internal validity, dimensionality and performance of the Body Shape Questionnaire in a group of Brazilian college students. *Rev Bras Psiquiatr.* 2009; 31(1):21-24.
11. Bosi MLM, Luiz RR, Morgado C, Costa M, Carvalho R. Autopercepção da imagem corporal entre estudantes de nutrição: um estudo no município do Rio de Janeiro. *J Bras Psiquiatr.* 2006; 55(2):108-113.
12. Bosi MLM, Luiz RR, Uchimura KY, Oliveira F. Comportamento alimentar e imagem corporal entre estudantes de educação física. *J Bras Psiquiatr.* 2008; 57(1):28-33.
13. Fernández ML, Otero MC, Castro YR, Prieto MF. Hábitos alimentarios e imagen corporal en estudiantes universitarios sin trastornos alimentarios. *Int J Clin Health Psychol.* 2003; 3(1):23-33.
14. Garcia CA, Castro TG, Soares RM. Comportamento alimentar e imagem corporal entre estudantes de nutrição de uma Universidade Pública de Porto Alegre-RS. *Rev HCPA.* 2010; 30(3):219-224.
15. Instituto Brasileiro de Geografia e Estatística. Pesquisa de Orçamentos Familiares - 2008-2009: antropometria e estado nutricional de crianças e adolescentes e adultos. Rio de Janeiro: IBGE; 2010.
16. Secchi K, Vizeu Camargo B, Bohn Bertoldo R. Percepção da imagem corporal e representações sociais do corpo. *Psic.: Teor e Pesq.* 2009; 25(2):229-236.
17. Cilliers J, Senekal M, Kunneke E. The association between the body mass index of first-year female university students and their weight-related perceptions and practices, psychological health, physical activity and other physical health indicators. *Public Health Nutrition.* 2006; 9(02):234-243.
18. Rousseau A, Knotter A, Barbe P, Raich R, Chabrol H. Validation of the French version of the Body Shape Questionnaire. *L'Encéphale.* 2005; 31(2):162.
19. Castro YR, Otero MC, Prieto MF, Fernández ML. Hábitos alimentarios e imagen corporal en estudiantes universitarios sin transtornos alimentarios. *Int J Clin Health Psychol.* 2003; 3(1):23-33.
20. Del Priore M. Corpo a corpo com a mulher: pequena história das transformações do corpo feminino no Brasil. São Paulo: Editora Senac; 2009.
21. Novaes JV. Beleza e feiura: corpo feminino e regulação social. In: Del Priore M, Amarantino M, organizadores. *História do corpo no Brasil.* São Paulo: Editora Unesp; 2011. p. 477-506.
22. Sant'Anna DB. *Corpos de passagem.* São Paulo: Estação Liberdade; 2001.
23. Sant'Anna DB. *Políticas do corpo.* São Paulo: Estação Liberdade; 2005. p. 121-127.
24. Courtine JJ. Os stakhanovistas do narcisismo: body-building e puritanismo ostentatório na cultura americana do corpo. In: Sant'Anna DB. *Políticas do corpo.* São Paulo: Estação Liberdade; 2005. p. 81-105.

25. Siqueira ERA, Queiroz EF. O caldo cultural das identificações contemporâneas. *Arq Bras Psicol.* 2010; 6(2):38-51.
26. Van Den Berg PA, Mond J, Eisenberg M, Ackard D, Neumark-Sztainer D. The link between body dissatisfaction and self-esteem in adolescents: Similarities across gender, age, weight status, race/ethnicity, and socioeconomic status. *J Adolesc Health.* 2010; 47(3):290-296.

Received: February 22, 2018

Reviewed: July 26, 2018

Accepted: August 06, 2018

