


 Mabel Nilson Alves¹
 Michele Dutra Rosolen¹
 Thielen Borba da Costa¹
 Fernanda Weber Bordin¹

¹ Universidade Federal de Pelotas,
Faculdade de Nutrição. Pelotas,
RS, Brasil.

Correspondence

Mabel Nilson Alves
mabelnvalves@yahoo.com.br

Association between body satisfaction and sociodemographic, behavioral and health aspects of university students

Associação entre satisfação corporal e aspectos sociodemográfico, comportamental e de saúde de universitários

Abstract

Introduction: Body image is a multidimensional and dynamic concept by which perceptions are formed based on experiences, concepts and behaviors. Few studies on body satisfaction are performed with university students, a public subject to eating disorders, considering the particularities of this period of life. This study aimed to evaluate body satisfaction and verify its association with sociodemographic, behavioral and health variables of university students. **Methods:** Cross-sectional study carried out with 115 residents of the University Student Houses, who answered a self-administered questionnaire. Socio-demographic (age, gender, nationality, region of origin, level and course area and maternal education), behavior (smoking, risk of abusive consumption of alcohol and level of physical activity) and health variables (diabetes mellitus, hypertension, dyslipidemia, depression and/or panic syndrome and nutritional status) were analyzed. Descriptive data analysis was performed considering a significance level of 95% (p value < 0.05). **Results:** Students presented a 53.9% prevalence of satisfaction with their own weight. Less than 10% of students reported having diabetes mellitus, arterial hypertension and dyslipidemia. Thirteen percent reported suffering from depression and/or panic syndrome. Slightly more than a quarter of the students were smokers, and this proportion also occurred among those who presented a risk of harmful consumption of alcoholic beverages. The practice of physical activity was significant among students, since 45.5% were active and 34.8% were very active. Regarding weight, 61.6% were eutrophic and 53.9% were satisfied with their weight. Body dissatisfaction was significantly associated with foreign nationality and nutritional status. **Conclusion:** Therefore, higher education institutions need to include the topic of body satisfaction in the care of university students through multidisciplinary teamwork aiming to demystify stereotyped patterns.

Keywords: Body image. Nutritional status. Health.

Resumo

Introdução: A imagem corporal é um conceito multidimensional e dinâmico, segundo o qual as percepções são formadas com base em experiências, conceitos e comportamentos. Poucos estudos sobre satisfação corporal são realizados com universitários, sendo esse público sujeito a transtornos alimentares, considerando as particularidades desse período da vida. O objetivo deste estudo é avaliar a satisfação corporal e verificar sua associação com variáveis sociodemográficas, comportamentais e de saúde de estudantes universitários. **Métodos:** Estudo

transversal realizado com 115 residentes na Casa de Estudantes Universitários, que responderam a um questionário autoaplicável. Sociodemográficas (idade, sexo, nacionalidade, região de origem, nível e área de atuação e escolaridade materna), comportamento (tabagismo, risco de consumo abusivo de álcool e nível de atividade física) e variáveis de saúde (diabetes *mellitus*, hipertensão, dislipidemia, depressão e / ou síndrome de pânico e estado nutricional). A análise descritiva dos dados foi realizada considerando um nível de significância de 95% (valor de $p < 0,05$). **Resultados:** Os alunos apresentaram prevalência de 53,9% de satisfação com o próprio peso. Menos de 10% dos estudantes relataram ter diabetes *mellitus*, hipertensão arterial e dislipidemia. Treze por cento relataram sofrer de depressão e / ou síndrome de pânico. Pouco mais de um quarto dos estudantes eram fumantes, e essa proporção também ocorreu entre os estudantes que apresentaram risco de consumo prejudicial de bebidas alcoólicas. A prática de atividade física foi significativa entre os estudantes, uma vez que 45,5% eram ativos e 34,8% eram muito ativos. Em relação ao peso, 61,6% eram eutróficos e 53,9% estavam satisfeitos com o peso que possuíam. A insatisfação corporal foi significativamente associada a nacionalidade estrangeira e estado nutricional. **Conclusão:** As instituições de ensino superior precisam incluir o tema da satisfação corporal no cuidado de estudantes universitários, por meio de trabalho em equipe multidisciplinar, com o objetivo de desmistificar padrões estereotipados.

Palavras-chave: Imagem corporal. Estado nutricional. Saúde.

INTRODUCTION

Body image is a multidimensional and dynamic concept by which perceptions are formed based on experiences, concepts and behaviors.¹ Some characteristics have been studied as factors associated with body satisfaction such as sociodemographic, health and psychological issues; however, few studies are reported on Brazilian university students and, in addition, they report divergent results.^{2,3}

University students have their own characteristics, as they are subject to changes typical of youth, and are still involved in social and cultural changes promoted by the university. Many of them involve stressful situations that may affect psychological and psychosomatic functioning.⁴ As described by Hricová et al.,⁵ the period of university studies is particularly risky for the manifestation of eating disorders, with direct repercussion on eating habits, which is maintained throughout life in many cases.

In this context, body dissatisfaction as a risk factor and a more consistent factor in the pathology of eating disorder stands out associated with a significant psychological morbidity throughout life.⁶ "Body dissatisfaction" is a term used to describe the discrepancy between the actual weight and the perceived ideal weight,⁷ generating too much concern for the body.⁸ Thus, assessing the perception of body image is of great importance since it represents the individual's susceptibility to social, cultural and epidemiological changes in a society, and it also represents how these changes affect self-perception.⁹ In addition, one can verify how much aesthetic value, norms and standards incorporated by society are able to transmit and reinforce social ideas related to the body with a strong impact on body satisfaction.¹⁰

It should be noted that health care for young people in federal public higher education is one of the areas of action of the National Program of Student Support.¹¹ Considering the guidelines of this program, this study aimed to provide data to support health promotion actions directed at university students, through the analysis of general health and especially with regard to body satisfaction and associated factors.

METHODS

The data presented in this study are part of a cross-sectional study carried out with residents of the University Student Houses of Rio Grande Federal University (USH/FURG). At the time of the study (January and February 2013), FURG had five USH in the Rio Grande-RS campus and one in the Santo Antônio da Patrulha-RS campus, totaling 287 students.

All students enrolled in undergraduate or graduate courses of the Federal University of Rio Grande residents of the USH of both sexes participated in this study, so they should be at the residence on the days of the research to be included. Wheelchair users, those with dwarfism, with amputated limbs, pregnant students or with another characteristic that would make it impossible to interpret the anthropometric assessment used in the study were excluded from the data analysis, because, for anthropometric evaluation specific methods should be used, which would undermine the analysis and data grouping.

Students answered a self-administered questionnaire content according to current and recommended literature.¹²⁻¹⁷ In addition, a pilot study was conducted to test the questionnaire in order to make the necessary adjustments in its structure and in the logistics of the collection of information thus avoiding the analysis of skewed data. The following variables obtained through the questionnaire will be described.

Sociodemographic variables such as gender (male and female), ages categorized as < 20 years, 20-24 years and ≥ 25 years, nationality (Brazilian or foreigner), administrative region of origin (North, Northeast, Southeast, South and Center-West), maternal education (obtained in complete years of study and categorized in 0-4, 5-8, 9-11 and 12 or more years of study) were collected. In this study, the variable maternal education

was used as a marker of economic level. In addition, information was obtained from undergraduate or postgraduate courses and codified in areas of knowledge: biological, exact, human, agrarian and health sciences.

Health variables were self-reported using the question: "Has some doctor already said that you have...", used to know about the presence of diabetes mellitus, arterial hypertension, dyslipidemia, depression and/or panic syndrome. And the behavior regarding the use of cigarettes or other smoke products was classified according to WHO,¹⁶ dichotomized into smokers (daily smoker, casual and passive smoker) and non-smoker (ex-smoker and non-smoker).

For the investigation of alcoholic beverage intake, the psychometric scale of the Alcohol Alcohol Disorder Identification Test (AUDIT) was used for the identification of disorders caused by the use of alcoholic beverages. This scale has the ability to verify the domains of risky use of alcohol, symptoms of dependence and harmful use. It presents a high sensitivity and specificity for use in the Brazilian population. The cut-off point adopted is the score ≥ 8 obtained in the AUDIT to define risky or harmful use of alcohol.¹⁸ To verify the level of physical activity (LPA), the International Physical Activity Questionnaire (IPAQ) was used in its short version.¹⁷

The nutritional status of the students was defined from anthropometric data on weight (in kilograms) and height (in meters), self-reported. These measurements were used to calculate the Body Mass Index (BMI) and to classify the nutritional status into low weight, eutrophic, overweight and obesity.¹⁹

The outcome was body satisfaction, classified into satisfied, dissatisfied with being overweight, dissatisfied with being considered underweight.

After an extensive advertising in the academic community, meetings were held to clarify the research in the USH, and the students who accepted to participate in the study signed an Informed Consent. In order to carry out the research protocol, this study was approved by the Ethics Committee on Research in the Health Area of the Federal University of Rio Grande-RS under the opinion no. 004/2014. To ensure standardization, the collaborators were trained in the correct approach and explanation to the students on how to complete the questionnaire, as well as how to enter the data in a proper database for later analysis. Data analysis was performed descriptively considering a significance level of 95% (p value < 0.05).

RESULTS

The sample of this study was composed of 115 students from USH / FURG. Women were 62.6% of the sample, 52.6% were individuals between 21-25 years old, most Brazilians were from the Southern region of the country, more than 90% were undergraduate students and about 60% studied exact sciences. Maternal education greater than or equal to 12 years was about 30% of the sample (table 1).

Table 1. Sociodemographic characteristics of a sample of university students, Rio Grande, 2014.

Variables	No.	%
Gender		
Male	43	37.4
Female	72	62.6
Age		
≤ 20	35	30.7
21-25	60	52.6
26-30	12	10.5
≥ 31	7	6.1

Table 1. Sociodemographic characteristics of a sample of university students, Rio Grande, 2014. (Continues)

Variables	No.	%
Nationality		
Brazilian	111	96.5
Foreign	4	3.5
Region of Origin		
North	3	2.7
Northeast	3	2.7
Center-West	4	3.6
Southeast	42	37.8
South	59	53.2
Course Level		
University graduate	111	96.5
Postgraduate studies	4	3.5
Course area		
Human Sciences	23	21.7
Biological Sciences	15	14.2
Exact Sciences	55	51.9
Health Sciences	9	8.5
Agrarian Sciences	14	3.7
Maternal Education		
0-4	22	19.6
5-8	21	18.8
9-11	34	30.4
≥ 12	35	31.3
Total*	115	100

* In some variables, the number of observations does not correspond to 115, due to lack of information

As shown in table 2, less than 10% of students reported having diabetes mellitus, arterial hypertension and dyslipidemia. While 13% reported suffering from depression and/or panic syndrome. Slightly more than a quarter of the students were smokers, and proportion which also occurred among the students who presented a risk of harmful consumption of alcoholic beverages. The practice of physical activity was significant among students, since 45.5% were active and 34.8% were very active. Regarding weight, 61.6% were eutrophic and 53.9% were satisfied with the weight they had.

Table 2. Health and behavior characteristics of a sample of university students, Rio Grande, 2014.

Variables	No.	%
Diabetes mellitus (self-reported)		
Yes	1	0.9
No	114	99.1
Arterial hypertension (self-reported)		
Yes	5	4.4
No	110	95.6
Dyslipidemia (self-reported)		
Yes	8	7.0
No	106	93.0
Depression and/or panic syndrome (self-referred)		
Yes	15	13.0
No	100	87.0

Table 2. Health and behavior characteristics of a sample of university students, Rio Grande, 2014. (Continues)

Variables	No.	%
Smoking		
Yes	31	27.2
No	83	72.8
Beverages		
Without risk	84	73.0
With risk	31	27.0
Physical Activity		
Inactive	22	19.6
Active	51	45.6
Very active	39	34.8
Nutritional Status		
Low weight	9	8.0
Eutrophic	69	61.7
Overweight	26	23.2
Obesity	8	7.1
Body Satisfaction		
Satisfaction	62	53.9
High dissatisfaction	40	34.8
Low dissatisfaction	13	11.3
Total*	115	100

* In some variables, the number of observations does not correspond to 115, due to the lack of information

As for the prevalence of body satisfaction according to sociodemographic variables, women presented a higher prevalence of body dissatisfaction: 41.9% considered being overweight. The prevalence of body satisfaction was higher among students up to 20 years old (60%), showing a tendency to decrease with increasing age. Among foreign students, 75% were dissatisfied because they believed they were overweight and 25% because they believed they were underweight ($p < 0.05$) and 55.9% Brazilian students were satisfied with their weight. Northeastern undergraduate and biological science students, whose mothers had five to eight years of schooling, had the highest prevalence of body satisfaction (table 3.).

Table 3. Prevalence of body satisfaction according to sociodemographic variables in a sample of university students, Rio Grande, 2014. (N = 115)

Variables	Body Satisfaction			P
	Satisfaction	High	Low	
	%	%	%	
Gender				0.158
Male	54.2	30.6	15.3	
Female	53.5	41.9	4.7	
Age				0.057
≤ 20	60.0	20.0	20.0	
21-25	56.6	36.7	6.7	
26-30	41.7	58.3	0.0	
≥ 31	28.6	57.1	14.3	
Nationality				0.045
Brazilian	55.9	33.3	10.8	
Foreign	0.0	75.0	25.0	

Table 3. Prevalence of body satisfaction according to sociodemographic variables in a sample of university students, Rio Grande, 2014. (N = 115). (Continues)

Variables	Body Satisfaction			P
	Satisfaction	High	Low	
	%	%	%	
Region of Origin				0.650
North	33.4	33.3	33.3	
Northeast	100.0	0.0	0.0	
Center-West	50.0	25.0	25.0	
Southeast	52.4	38.1	9.5	
South	57.6	32.2	10.2	
Course Level				0.781
University graduate	54.1	34.2	11.7	
Postgraduate studies	50.0	50.0	0.0	
Course area				0.289
Human Sciences	43.5	43.5	13.0	
Biological Sciences	66.7	33.3	0.0	
Exact Sciences	58.2	29.1	12.7	
Health Sciences	44.4	44.4	11.2	
Agrarian Sciences	50.0	0.0	50.0	
Maternal Education				0.158
0-4	50.0	36.4	13.6	
5-8	61.9	38.1	0.0	
9-11	47.1	44.1	8.8	
≥ 12	60.0	20.0	20.0	

The prevalence of body satisfaction related to health and behavioral variables was higher among those who reported not having dyslipidemia, depression and/or panic syndrome, non-smokers, those who did not present a risk of harmful consumption of alcoholic beverages, and inactive and eutrophic people. The prevalence of body dissatisfaction was higher among diabetics, hypertensive people, very active people, overweight and obese because they considered being overweight. From these variables, the relationship between body satisfaction and nutritional status was the only one with a statistical significance ($p < 0.001$) and showed to be inversely proportional (table 4).

Table 4. Prevalence of body satisfaction according to health and behavior variables in a sample of university students, Rio Grande, 2014. (N = 115)

Variables	Body Satisfaction			P
	Satisfaction	High	Low	
	%	%	%	
Diabetes mellitus (self-reported)				0.461
Yes	0.0	100.0	0.0	
No	54.4	34.2	11.4	
Arterial hypertension (self-reported)				0.409
Yes	40.0	60.0	0.0	
No	54.6	33.6	11.8	
Dyslipidemia (self-reported)				0.980
Yes	50.0	37.5	12.5	
No	54.7	34.0	11.3	
Depression and/or panic syndrome (self-referred)				0.127
Yes	40.0	33.3	26.7	
No	56.0	35.0	9.0	

Table 4. Prevalence of body satisfaction according to health and behavior variables in a sample of university students, Rio Grande, 2014. (N = 115). (Continues)

Variables	Body Satisfaction			P
	Satisfaction	High	Low	
	%	%	%	
Smoking				0.425
Yes	45.2	38.7	16.1	
No	56.6	33.7	9.6	
Beverages				0.470
Without risk	57.1	32.1	10.7	
With risk	45.2	41.9	12.9	
Physical Activity				0.626
Inactive	63.6	27.3	9.1	
Active	54.9	31.4	13.7	
Very active	48.7	43.6	7.7	
Nutritional Status				0.000
Low weight	44.4	0.0	55.6	
Eutrophic	71.0	17.4	11.6	
Overweight	26.9	73.1	0.0	
Obesity	12.5	87.5	0.0	

DISCUSSION

The results of this study showed that 53.9% of students interviewed were satisfied with their weight, with similarity between men (54.2%) and women (53.5%). This prevalence of body satisfaction is higher than in other studies performed with university students.^{3,20} The association of the outcome with the nutritional status was highly significant, so that eutrophic individuals were satisfied with their weight. Similarly, individuals with a low weight were dissatisfied because they were underweight, and those who were overweight or obese were dissatisfied because they considered themselves overweight. These relationships were also observed by Silva et al.,³ who highlighted the body dissatisfaction of women even when they had the appropriate weight. The association between body dissatisfaction and overweight may reflect the influences on university students of lean body patterns, which are strongly disseminated by society, imposing the search for an ideal body image.⁸ Such standards spread the idea that women should be thin, with a catwalk model as an example, and men should be strong and muscular. University students are susceptible to this influence, since the vast majority is in search of an effective social insertion, aiming to be within said "normal" patterns.^{3,21} In addition, health concerns may have contributed to the prevalence of dissatisfaction with body weight presented in the students analyzed, because the ideal of health reaffirms an individual blame for weight, strengthening widespread common stereotypes.²² On the other hand, this may represent a positive factor, as health concerns are related to better quality of life.²³

An aspect to be pointed out concerns the use of self-reported measures of weight and height to assess nutritional status, as a variability of differences with measured values was observed, resulting in errors in the classification of nutritional status. In order to use this type of data, caution is necessary, although they have already been validated as a useful tool in financial or logistical restrictions for data collection.²⁴ As is the case with the Ministry of Health, which since 2006 has conducted a national survey of Chronic Noncommunicable Disease Risk and Protection Factor Surveillance System (VIGITEL), which uses self-reported weight and height data, among others. The results obtained in this survey are used as a basis for planning and implementing social and health actions and programs.²⁵

Another significant relation was the stratification by nationality, evidencing that all foreign university students were dissatisfied with their weight. Some authors like Alves et al.²⁶ and Silva et al.,³ upon reviewing the subject of body image and culture, concluded that culture directly influences body perception and ideas of beauty, and Western culture has intrinsically an intense self-requirement by lean and muscular standards as presented by the media. Rakhkovskaya and Warren²⁷ examined relationships between ethnic identity, American identity, lean and ideal body perceptions, pressure for thinness and body dissatisfaction in 1,018 ethnically diverse university women. They noted that ethnic identity attenuated the relationship between pressure for a lean body and body dissatisfaction for Afro-American and Asian-Americans, and was considered a protective factor against eating disorders in these groups. However, the same relationship was not found among American-European or Latin American students. In another research with students from a university in the northeastern United States, Afro-American college students showed a greater degree of cognitive and behavioral investment in appearance than did European Americans.²⁸ Considering this and the lack of research evaluating the influence of students' nationality on their studies, studies should be conducted to assess the factors involved with the association of body dissatisfaction and nationality.

As for the other sociodemographic variables, most university students were women, as was found by other studies.^{12,29,30} These results corroborate the last Brazilian census, in which women had higher prevalence rates of admission and completion of higher education and lower dropout rates, when compared to males for the data evaluated between 2010-2016.³⁰ Regarding maternal education, for 61.7% of university students, their mothers had nine or more years of study. Pauliscth et al.,¹² in the study on behavioral risk factors for cardiovascular disease in university students, it showed that 46.7% of students had maternal education equal to or higher than 12 years and the body satisfaction of their sample was 55.8%, although 40.6% of the total (1,123) had BMI greater than or equal to 25.0 kg / m².

When relating the area of the undergraduate or postgraduate course with body dissatisfaction, it was higher in the humanities courses (56.5%), followed by courses in the health area (55.6%). For health students, body satisfaction is possibly lower due to self-requirement by a healthy body, within the adequate patterns, and serving as an aesthetic model for future patients.³¹

Parents' education is another important factor, since it is a good predictor of socioeconomic status. Families in which the "head" has a higher level of education tends to have a better economic condition. Maternal education also has strong connection with body perception, although few studies report it, as revealed by the review study by Souza et al.³² including 76 studies, in which only one research, by Silva et al.,³³ found association between dissatisfaction with excess weight among university students whose mothers studied for four years or more. Likewise, this study found a prevalence of 44.1% of body dissatisfaction, among students who self-reported overweight and whose mothers had 9-11 years of schooling.

In this study, a prevalence below 10% for diabetes mellitus, hypertension and dyslipidemias was observed among the university students interviewed. According to the latest telephone survey in Brazilian capitals - the VIGITEL²⁵ -, a prevalence of 4% of hypertension and 0.8% of diabetes in adults of both sexes, between 18 and 24 years of age, was found; the prevalence is higher as age increases.²⁵ The relationship of body satisfaction with these diseases showed that body dissatisfaction due to being overweight was present in all students who reported being diabetic, and in 60% of those who reported being hypertensive. It is worth mentioning that, for these diseases, it is necessary to obtain and maintain a healthy weight as part of the treatment.³⁴

It is noteworthy that 13% of the students analyzed reported being diagnosed with depression and/or panic syndrome. In the literature it is estimated an average of 24% of university students have some

depression symptoms during their academic trajectory, with higher prevalence of anxiety.³⁵ Both are more frequent results in university students because they have a poorly developed social network, as they take extremist and harmful measures when looking for new social groups.³⁶ In this study, a higher prevalence of body dissatisfaction among the students who reported having these diseases was identified, but without statistical significance. This may have occurred due to the small sample size,³⁷ since the association between body dissatisfaction and the presence of depression / anxiety has already been observed.⁶

When individuals have a negative perception of their bodies in relation to culturally valued characteristics, they may present low self-esteem, low life satisfaction and inferiority, and it is important to emphasize that these psychological behaviors may cause a greater risk not only of eating disorders, but also of depression and anxiety.³⁸ These findings reinforce the idea that body dissatisfaction is strongly seen as one of the main risks for eating disorders, as it allows to adopt extreme dietary measures,³⁹ such as excessive or insufficient food intake, reproducing a cycle between affected mental health and eating behavior.^{3,40}

As to behavioral variables, the prevalence of university students who smoked (27.2%) and those reporting alcohol consumption (27%) was similar to the study by Guimarães, et al.,⁴¹ in young people between 20 and 24 years old residents of a Brazilian city and, despite the high prevalence, no statistical association was found between the variables. University life is in itself a risk factor for increased consumption of alcohol and other drugs, such as tobacco. During this period, drug use can be justified by the young person's view of being a mechanism for possible relief from the exhaustion strongly observed in the period, to relax before stress and as a way of forgetting problems, in addition to family distancing, the search for new friends and self-knowledge.^{42,43} However, the increase in the use of other drugs among university students is inversely associated with the life expectancy of this population, as a result of risky behaviors that can affect their well-being.⁴³ In addition, high levels of alcohol intake lead to increased BMI.⁴⁴

The prevalence of active and very active university students was high (80.4%) in this study sample, being higher than that found by other authors.⁴⁵ The absence of an association between body image and physical activity is already reported in the literature and even in university Physical Education students.⁴⁶ When an association is found, dissatisfied individuals are the most physically active when compared to satisfied individuals, corroborating the findings of this study. This may reflect a search for stereotyped profiles through physical exercise, through either a thinner body (excessive dissatisfaction) or a more muscular body (dissatisfaction with thinness). This result is an aspect of great importance for the health of university students, because the university period embraces mainly young people at the beginning of their adult life, a phase of consolidation of values, habits and behaviors ends up being characterized. University students are at risk for sedentary behavior due to long periods of attending classes and studying seated. On the other hand, they are still young and expected to be in good health, in an environment rich in information, to encourage and facilitate engagement in various forms of physical activity and other healthy behaviors.⁴⁷ It is worth mentioning that the practice of physical activity is associated with the prevention of chronic non-communicable diseases, strengthening and maintaining bone mass, mood modulation, among other benefits.⁴⁸

CONCLUSION

In this study, body dissatisfaction was associated with the participants' nutritional status and foreign nationality. Therefore, these results indicate the need for higher education institutions to promote actions aiming to demystify stereotyped patterns.

Finally, there is a need for more studies on the university population in order to elucidate determinants of body satisfaction, and how much it affects interpersonal relations and academic performance.

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Contributors

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