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OVERWEIGHT AND OBESITY: ASSOCIATION WITH THE SOCIOECONOMIC LEVEL OF UNIVERSITY STUDENTS

SOBREPESO E OBESIDADE: ASSOCIAÇÃO COM O NÍVEL SOCIOECONÔMICO DE UNIVERSITÁRIOS

SOBREPESO Y OBESIDAD: ASOCIACIÓN CON EL NIVEL SOCIOECONÓMICO DE UNIVERSITARIOS

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ABSTRACT

Objective: to evaluate the prevalence of overweight and obesity and the association with the socioeconomic level of university students. ***Method:*** a quantitative cross-sectional study carried out in a public university with 550 university students of both sexes and aged between 18 and 51 years. Nutritional status was estimated using the Body Mass Index and the socioeconomic level, using a standardized questionnaire. The data was analyzed in SPSS software 20.0 and presented in a figure and tables. ***Results:*** the majority of university students were women (66.2%). The prevalence of overweight was 20.4%. The students classified in the middle and high socioeconomic levels presented 2.86 and 3.46 more chances of developing excess weight, respectively. ***Conclusion:*** university students presented a considerable prevalence of overweight and individuals at higher socioeconomic levels were more likely to be overweight and obese. ***Descriptors:*** Obesity; Overweight; Students.

RESUMO

Objetivo: avaliar a prevalência de sobrepeso e obesidade e a associação com o nível socioeconômico de universitários. ***Método:*** estudo quantitativo, transversal, realizado em uma universidade pública, com 550 universitários de ambos os sexos e idade entre os 18 e 51 anos. O estado nutricional foi estimado por meio do Índice de Massa Corporal e o nível socioeconômico, por meio de um questionário padronizado. Os dados foram analisados no *software* SPSS 20.0 e apresentados em uma figura e tabelas. ***Resultados:*** a maioria dos universitários era mulheres (66,2%). A prevalência de excesso de peso foi de 20,4%. Os universitários classificados no nível socioeconômico médio e alto apresentaram 2,86 e 3,46 mais chances de desenvolver excesso de peso, respectivamente. ***Conclusão:*** os universitários apresentaram considerável prevalência de excesso de peso e os indivíduos, nos níveis socioeconômicos mais elevados, tinham maiores chances de sobrepeso e obesidade. ***Descritores:*** Obesidade; Sobrepeso; Estudantes.

RESUMEN

Objetivo: evaluar la prevalencia de sobrepeso y obesidad y la asociación con el nivel socioeconómico de universitarios. ***Método:*** estudio cuantitativo, transversal, realizado en una universidad pública, con 550 universitarios de ambos sexos y edad entre los 18 y 51 años. El estado nutricional fue estimado por medio del Índice de Masa Corporal y el nivel socioeconómico, a través de un cuestionario estandarizado. Los datos fueron analizados en el software SPSS 20.0 y presentados en una figura y tablas. ***Resultados:*** la mayoría de los universitarios eran mujeres (66,2%). La prevalencia de sobrepeso fue del 20,4%. Los universitarios clasificados en el nivel socioeconómico medio y alto presentaron 2,86 y 3,46 más posibilidades de desarrollar exceso de peso, respectivamente. ***Conclusión:*** los universitarios presentaron una considerable prevalencia de exceso de peso, y los individuos, en los niveles socioeconómicos más elevados, tenían mayores posibilidades de sobrepeso y obesidad. ***Descriptores:*** Obesidad; Sobrepeso; Estudiantes.

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INTRODUCTION

Obesity and overweight represent a global epidemic, with increasing burden, especially, in developing countries.[1] In Brazil, the high prevalence of obesity has directly contributed to public expenditures related to the treatment of the disease and its comorbidities.[1-2]

In the context of the epidemiology of obesity, several risk factors are listed as moderators of this epidemic.[3] In particular, when considering the socioeconomic level in the distribution of overweight and obesity, divergences have been observed among the different social strata of the population.[4- 5]

In the case of university students, it is interesting to note that, despite schooling, this group is noted for having a high prevalence of health risk factors, including overweight.[6-8] Regarding socioeconomic factors, in a study where they were evaluated university students from 22 countries, it was found that the family financial condition and the economic classification of the country of origin were associated with overweight and obesity.[9]

In Brazil, investigations with this group have found significant prevalences of overweight and obesity.[10-1] However, there is still limited information in the region and state of this study about the relationship of these variables with the socioeconomic level in groups of young adults, such as university students.

Thus, the objective of this study was to evaluate the prevalence of overweight and obesity and its association with the socioeconomic level of university students.

METHOD

This study is part of the research project titled << Metabolic Syndrome among University Students: Prevalence and Educational Interventions >> carried out in a public institution of higher education in the city of Picos (PI), Brazil.

Quantitative, descriptive, cross - sectional study. The population was composed of 2,868 university students, of both sexes, enrolled in the period of the research. The sample size was calculated using finite population formula, considering a level of significance (α = 0.05) and relative sample error of 8% (absolute error = 4%), t25% = 1.96. The sample was estimated at 500 participants. Considering a 10% loss of information in questionnaires, by means of erroneous and / or incomplete answers, the definitive size totaled 550. The sample was stratified among the nine undergraduate courses offered by the institution, to ensure its representativeness.

Inclusion criteria: be regularly enrolled in one of the institution's courses; being 18 years of age and not presenting a confirmed diagnosis of any chronic disease.

Data were collected from December / 2012 to March / 2013. The instrument used was a semi-structured questionnaire involving sex, age, economic level and anthropometric data (weight, height, body mass index).

The anthropometric measures were performed with the student wearing light and barefoot clothing. The weight was measured using a digital scale with an accuracy of 0.1 kg and a capacity of 120 kg. The height, by means of tape measure with precision of one millimeter, fixed vertically in a smooth wall. Nutritional status was classified by the Body Mass Index (BMI), based on cut-off points proposed by the World Health Organization (WHO). [12] The term overweight was used to group overweight and obese individuals.

The socioeconomic level was evaluated according to the Brazilian Economic Research Criterion of the Brazilian Association of Research Companies (BARC), [13] regarding the purchasing power of a population. The classification was performed considering the economic classes of BARC E and D, as a low socioeconomic level; C, as medium; B and A, as high.

Data processing and analysis were performed using the Statistical Package for the Social Science®, version 20.0, considering the significance level of 5%. Data were organized through descriptive statistics (frequency, mean and standard deviation). The normality of the data was accepted by the Kolmogorov-Smirnov test. Bonferonni's Chi-square test with post hoc was performed to verify differences between categorical variables. The logistic regression analysis, by the Wald method, was applied to estimate the Odds Ratio (OR), between economic level and excess weight, adjusted for gender and age.

The study design was approved by the Research Ethics Committee of the Federal University of Piauí (UFPI), according to CAAE 0408.0.045.000-11 and all the participants signed a Free and Informed Consent Term.

RESULTS

The characterization of the sample, according to the evaluated variables, is presented in Table 1.

Fifty-five university students (66.2% women), aged 18 to 51 years and mean of 22.6 years (± 4.42) were included, the

majority (51.8%) belonging to economic class C (C1 + C2).

Regarding nutritional status, the prevalence of overweight was 20.4%. Of these, 15.5% were overweight and 4.9%, obesity (Table 1).

Table 1. Distribution of the sample, according to the variables evaluated. Picos (PI), Brazil, 2013.

Variable	n	%
Sex		
Male	186	33.8
Female	364	66.2
Nutritional status		
Normal	438	79.6
Overweight	85	15.5
Obesity	27	4.9
Course		
Health	223	40.6
Humanities	236	42.9
Exact sciences	91	16.5
Economic class		
A (A1+A2)	11	2.0
B (B1+B2)	186	33.8
C (C1+C2)	285	51.8
D-E	68	12.4

The nutritional status, according to the sex of the university students, showed that overweight and obesity were significantly predominant among male college students ($p < 0.05$), as observed in Figure 1.

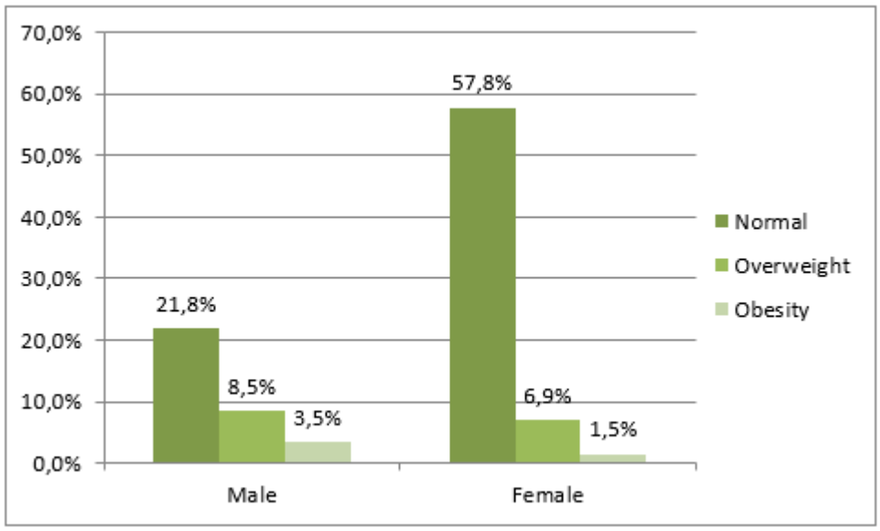

Figure 1. Nutritional status, according to the sex of university students. **Pearson Chi-square* with post hoc of Bonferonni between nutritional status and sex of university students.

Table 2 shows the distribution of nutritional status, according to the socioeconomic levels, of university students by sex. No differences were observed for both genders ($p > 0.05$).

Table 2. Nutritional status, according to socioeconomic levels, of college students by sex. Picos (PI), Brazil, 2013.

Socioeconomic level	Male					Female				
	Normal		Excess weight			Normal		Excess weight		
	n	%	n	%		n	%	n	%	
Low	14	7.5	7	3.8	*X^2=0.120*	43	11.8	4	1.1	*X^2=1.644*
Medium	90	48.4	51	27.4	*p*=0.942	248	68.1	36	9.9	*p*=0.440
High	16	8.6	8	4.3		27	7.4	6	1.7	

In the regression analysis, it was verified that the university students, of the average and high socioeconomic level, had 2.86 and 3.46 more chances of developing excess weight, respectively. In addition, the chance of developing overweight and / or obesity was 1.11 times for each year of life of the university students evaluated (Table 3).

Table 3. Ratio of chances of overweight / obesity, according to the socioeconomic levels of the university students. Picos (PI), Brazil, 2013.

Variable	Overweight/obesity OR (IC95%)	*p*
Age	1.11 (1.06-1.16)	0.000
Socioeconomic level		
Low	1	
Medium	2.86 (1.11-7.39)	0.030
High	3.46 (2.18-5.49)	0.000

DISCUSSION

This study evaluated the prevalence of overweight and obesity and its association with the socioeconomic level of students from a public university in the central-south region of Piauí (PI), Brazil.

The characterization of university students, described in this research, is similar to a study carried out in Colombia, where female students predominated and concentrated in the lower economic classes.[14]

The prevalence of overweight (20.4%) and obesity (4.9%) found in this study is similar to that reported in other studies conducted with university students.[15-6]

The impact of overweight and obesity on metabolic health is known in the literature, mainly because it increases the risk of other diseases.[17-8] In this context, it should be noted that this group has been associated with risk behaviors that may contribute to the development of obesity. For example, a study that evaluated the practice of physical activity by university students from different academic areas found that 77.2% were sedentary.[19] A study, with a representative sample of university students from 26 countries, observed an inadequate dietary intake of fruits and vegetables in this group.[20]

Regarding the relationship between the nutritional status and the socioeconomic status of the individuals, this study showed that university students, classified in the middle and high socioeconomic levels, were more likely to be overweight and obese. Corroborating, a study carried out with university students from the Northeast region of Brazil found a higher proportion of overweight, with no significant difference, in the higher economic strata, 31.1% and 26.0% for classes A and B, respectively.[21]

In general, considering the schooling of this group, it is important to note that the educational level has been inversely related to overweight in some countries.[4] However, in school children, a higher prevalence of overweight is also observed in families with greater purchasing power.[22] Thus, it seems that other factors may also be involved in the relationship between obesity and socioeconomic status.

In the case of university students, it is also fundamental to observe behavioral parameters related to the etiology of obesity. In previous researches of this research group, high prevalence of sedentarism by these students was verified.[11] However, it would be necessary to evaluate other factors, such as food consumption, to better understand this relationship. Thus, it is suggested that future studies, conducted with this group, include other confounding variables, such as those previously listed. Also, research that seeks to establish cause and effect relationship among the studied variables.

CONCLUSION

The findings of this study demonstrated a considerable prevalence of overweight and obesity in university students evaluated. In addition, the risk of developing overweight was higher at medium and high socioeconomic levels in this study.

The studied group was predominantly composed of young adults with a high educational level. It is suggested the need to implement interventionist measures in the teaching environment, including plans to encourage the adoption of adequate dietary standards and regular physical exercise, in order to reduce risk factors for obesity and related diseases directed to this group.

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