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ANALYSIS OF OVERWEIGHT AND OBESITY IN UNIVERSITY STUDENTS

ANÁLISE DO SOBREPESO E DA OBESIDADE EM ESTUDANTES UNIVERSITÁRIOS

ANÁLISIS DE SOBREPESO Y OBESIDAD EN ESTUDIANTES DE LA UNIVERSIDAD

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ABSTRACT

Objective: to analyze the prevalence of overweight and obesity in a population of university students.

Method: cross-sectional and descriptive study in a Higher Education Institution of south-central Piauí/PI/Brazil, during the months of April and May 2011 with 101 students, of both sexes, belongs to four undergraduate degrees: nursing, administration, pedagogy and biological sciences. For the analysis of overweight, we used accurate measurements of weight and height, in addition to calculating the Body Mass Index. The project was approved by the Committee of Ethics in Research of the Federal University of Piauí, Protocol N.0016.0.045.000-11. **Results:** the female composed most of the subjects investigated (71.3%). Overweight was present in 24.8% of the sample, with higher percentages in males (44.4%), students in the course of administration (42.3%) and students in the 2nd year course (33.3%). **Conclusion:** overweight and obesity were present in large proportions in young subjects. **Descriptors:** Overweight; Obesity; Students; Adolescent Health; Nursing.

RESUMO

Objetivo: analisar a prevalência de sobrepeso e de obesidade numa população de estudantes universitários.

Método: estudo descritivo e transversal, realizado em uma Instituição de Ensino Superior do centro-sul piauiense, com 101 estudantes universitários. A coleta de dados ocorreu nos meses de abril e maio de 2011. Para a análise do excesso de peso, utilizaram-se medidas acuradas do peso e da estatura, além do cálculo do Índice de Massa Corporal. O projeto foi aprovado pelo Comitê de Ética em Pesquisa da Universidade Federal do Piauí, Parecer N.0016.0.045.000-11. **Resultados:** o sexo feminino compôs a maior parte dos sujeitos investigados (71,3%). O excesso de peso esteve presente em 24,8% da amostra, estando em maiores percentuais naqueles indivíduos do sexo masculino (44,4%), nos estudantes do curso de administração (42,3%) e nos alunos do 2º ano de curso (33,3%). **Conclusão:** o sobrepeso e a obesidade estiveram presentes em grandes proporções nos indivíduos jovens. **Descritores:** Sobrepeso; Obesidade; Estudantes; Saúde do Jovem; Enfermagem.

RESUMEN

Objetivo: analizar la prevalencia de sobrepeso y obesidad en una población de estudiantes universitarios.

Método: estudio transversal y descriptivo en una Institución de Educación Superior de la centro-sur de Piauí, con 101 estudiantes. Para el análisis del exceso de peso, se utilizaron mediciones precisas de peso y talla, además de calcular el Índice de Masa Corporal. El proyecto fue evaluado y aprobado por Comité de Ética en Pesquisas con seres humanos de la Universidad Federal de Piauí (Protocolo N.0016.0.045.000-11). **Resultados:** la hembra compuso la mayoría de los sujetos investigados (71,3%). El sobrepeso se presentó en el 24,8% de la muestra, con porcentajes más altos en los varones (44,4%), los estudiantes en el curso de la administración (42,3%) y estudiantes en el curso 2º año (33,3%). **Conclusión:** el sobrepeso y la obesidad están presentes en una gran proporción de sujetos jóvenes. **Descriptores:** Sobrepeso; Obesidad; Estudiantes; Salud del Adolescente; Enfermería.

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INTRODUCTION

Obesity affects 7% of the world's population, and is considered a true epidemic and serious public health problem throughout the world. By 2015, it is projected that approximately 2.3 billion adults will overweight and more than 700 million will be obese.¹

As well as obesity, overweight also brings adverse consequences to health, compromising the quality of life and increasing the risk of early diseases, disabilities and even death.²

The harms arising from excess weight represent a burden on the health services in case of future generations. The combination of direct and indirect costs with obesity and overweight generate spending, for example, in the United States, from about 117 billion dollars a year, based on their prevalence and proportion of complications attributable.³

When it comes to Brazil, on a universe of 95.5 million people 20 years or older, an estimated 38.8 million (40.6%) are overweight, of which 10.5 million are considered obese.⁴

Scholars show that 42.7% of Brazilians were overweight in 2006, and in 2011 that number grew to 48.5%. Already the number of obese people in the country came from 11.4% to 15.8%, in the same period. If the country continues in this progression, the number of overweight people will reach 60% of the population in 13 years.⁵

Developed and developing countries have concentrated efforts to identify and control the obesity and overweight, since if the metabolic changes such as Dyslipidemia, hypertension and glucose intolerance, regarded as determining factors for some chronic non-communicable diseases.⁶

The transition from adolescence to adulthood has shown himself to be a period of increased risk in the development of obesity and overweight, mainly due to lack of adherence to the practice of physical exercises, as well as the many stressors associated with this age group, in addition to the lack of time.⁷⁻⁸

The University presents this transition period, in which, for these young people, involves the adaptation of behavior in a new environment. Researchers reveal that 70% of students gained weight during the second year of College, the result of inadequate eating habits and lifestyle change.⁹

Searches held in different databases show that the problem of overweight in university

students has been identified in different countries. In the United States, research conducted with more than 27,000 American University; found that more than 30% of them were overweight or obese.¹⁰

In Japan, a research pointed out that the percentage of obese or overweight students came from 9.8% to 11.7% in just five years, indicating that some students do not acquire healthy lifestyle habits, generally associated with a poor nutrition, non-adherence to exercise practices, in addition to stress and other factors associated with daily life linked to University.¹¹

In addition, analysis conducted in Mexico with academics found that, of 821 students (among both men and women) selected from 17 distinct colleges, 44.8% were overweight and 19.9% were obese.¹²

On the exploitation of some research described above, note that the University population is a group especially vulnerable as dietary habits and lifestyle. They are in a crucial moment of their lives, going through significant changes, whether in respect of the acquisition of knowledge, whether in search of responsibilities for execution of tasks previously carried out by their parents, how the care of feeding. Have representative data concerning life habits of this population is of paramount importance, once in possession of this information, educational measures may be directed in an attempt to reduce the possibility of the emergence of chronic degenerative diseases in the future, as well as reduce significant public health spending. However, so far, there is little information on the subject in Brazil, especially in the Northeast. On the identification of this gap, the aim of this study is to analyze the prevalence of overweight and obesity in a population of college students and associate the prevalence of overweight with the sex variable, course and semester attended.

METHOD

Non-experimental study, descriptive, transversal and quantitative approach in a Federal institution of higher education (IFES) of South Central Piauí. The population was composed of students of both sexes. It was used as inclusion criteria: be over 18 years old, be duly enrolled at IFES selected and participate in all stages of the research. Excluded students who had a diagnosis of diabetes mellitus type 2 confirmed or other chronic diseases that could interfere directly with the weight and height, as well as those who have impeded the attainment of

anthropometric measurements, in addition to pregnant women. The sample, for convenience, it involved 101 students, being stratified as follows: Bachelor's degree in nursing (25.7%), Bachelor of business administration (25.7%), the full Degree in pedagogy (23.8%) and Full Degree in Biological Sciences (24.8%).

Data collection took place in the months of April and May of 2011 and was composed of a few steps. Initially researchers, nurse, graduate students in nursing and scientific initiation scholarship, went to classrooms to explain the research project, its objectives and methodology. Then after the manifestation of the desire of students to participate, were handed terms of informed consent. The second stage of the research was the collection of actual data. The data were collected through a structured form covering, among others, the following: age, sex, course, studying period, anthropometric measurements (weight and height) and physical activity. The weight data were obtained with guys barefoot and with light clothes, using a portable digital scales with ability to record 120 Kg and a precision of 0.1 Kg, automatic display triggered with the touch of the feet positioned on the straight floor.

The height was evaluated with use of tape measure with a precision of 0.5 cm, fixed in smooth wall. The measurements of height were taken with barefoot students, with feet together and in parallel, in an upright position and looking forward, with the support of a ruler who was placed on the head of the participants, to ensure measurement accuracy in measuring tape.

The body mass index (BMI) was defined as

the ratio between the weight of the student and the square of its height, normal values being considered between 18.5 - 25 kg/m2 according to the OMS.¹³

It should be noted that, initially, the data were stored in a database, rendered in Epig. Info, version 3.5.2 and organized into tables and a figure. Were calculated the statistical measures of quantitative variables: mean and standard deviation, made inferences, statistical analyses when it calculated the 95% confidence intervals (95%). For the association between the variable being overweight, sex, course and studying period used the Chi-square test, being considered significant when p values < 0.05. As for the ethical aspects of research, it is worth mentioning that this was done with the approval of the Research Ethics Committee of the Universidade Federal do Piauí (look under the number 0016.0.045.000-11), seeking to meet the requirements of the National Health Council in carrying out research with human beings appointed by resolution 196/96 of the Ministry of health.¹⁴

RESULTS

Of the total number of students assessed in undergraduate courses, 101 composed the sample. Of these, 72 (71.3%) were female and 29 (28.7%) male. The age of the individuals surveyed ranged from 18 to 39 years, being the average of 21.8 years. The sample was stratified, determined in four courses offered at the institution (nursing, biological sciences, administration and pedagogy) and contemplated all periods offered at the time of data collection (1° year: Blocks I and II; 2° year: III and IV Blocks; 3° year: V Block), as Table 1 data summarization.

Table 1. Distribution of students according to gender, course and period. Floriano-PI, 2011. (N=101).

Variables	N°	%
Sex		
Female	72	71,3
Male	29	28,7
Course		
Nursing	26	25,7
Biology	25	24,8
Administration	26	25,7
Pedagogy	24	23,8
Period		
1° year	63	62,4
2° year	18	17,8
3° year	20	19,8

Figure 1 shows that, from the analysis of BMI, 24.8% of individuals showed overweight and/or obesity.

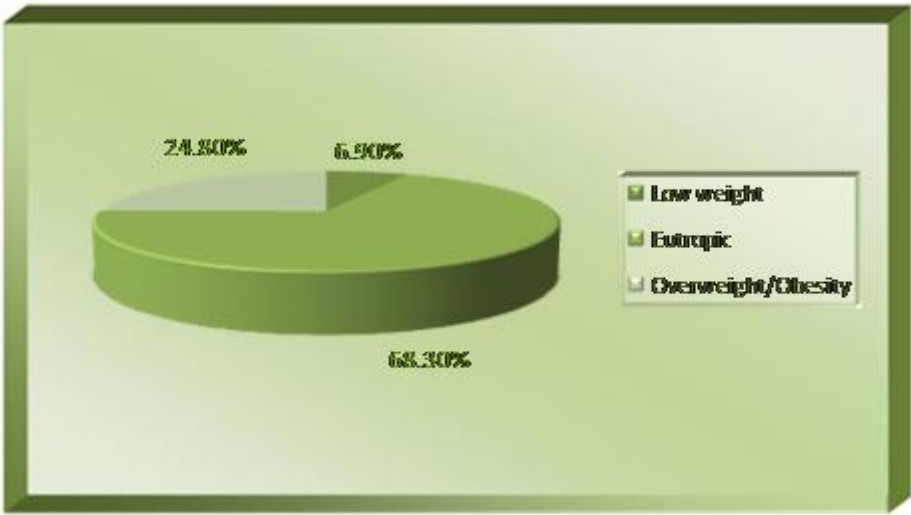


Figure 1. Distribution of students according to the clinical variables. Floriano-PI, 2011.

Table 2 shows that there was no statistically significant association between excess weight and sex. One of the men examined, 44.8% are overweight/obesity, compared to women who were overweight at 16.7% ($p = 0.0113$). In referring to the course attended by academics, the prevalence of Overweight/obesity was present as follows: 42.3% on administration, 15.4% in nursing,

16.0% in biology and 25.0% in students of pedagogy ($p = 0.2114$). The courses that had the highest prevalence of eutrophic people were nursing (73.1%) and biology (76%). As for the period studied was noted that students of 2nd year of course had the highest proportions of overweight and obesity, 33.3% (0.7516).

Table 2. Association of body mass index (IMC) with the variable gender, course and studying period of University students. Floriano-PI, 2011.

Variable	IMC				Value P*
	Eutrophic		Overweight/Obesity		
	Nº	%	Nº	%	
Sex					0,0113
Male	15	55,5	12	44,8	
Female	54	80,5	13	16,7	
Course					0,2114
Nursing	19	73,1	4	15,4	
Biological Sciences	19	76	4	16	
Administration	15	57,7	11	42,3	
Pedagogy	16	66,7	6	25	
Period					0,7516
1º year	44	69,8	15	23,8	
2º year	10	55,6	6	33,3	
3º year	15	75	4	20	

* Test used for the Association: Chi-square. Significant value if $P<0,05$.

DISCUSSION

The analysis of the data from this study revealed a high prevalence of Overweight/obesity in students evaluated (24.8%). Study on State of Pernambuco found smaller percentages of overweight and obesity than the present research. Among a sample of 240 students (88 men and women 152) the prevalence of overweight and obesity amounted to 6.2% in men and from 4.0% in women.¹⁵

The prevalence of Overweight/obesity found in this research was present in greater proportions in males (44.8%) compared to females (16.7%), indicating a statistically significant Association ($p = 0.0113$). This prevalence is similar to that found in the literature that refers to a higher prevalence in

men. In the survey of Family Budgets (POF), conducted by the Brazilian Institute of geography and statistics (IBGE), the overweight among men reached 50.1% and females 48%. As obesity has increased more than four times among men, of 2.8% to 12.4%, and more than twice among women, 8% to 16.9% in the period from 2008 to 2009.¹⁶

However, the literature can present separate data for this research. Study developed by the health surveillance system (SVS-Ministry of health) showed that women are more obese than men, constitute 15.5% vs. 14.4%.⁵

Scholars who found the nutritional status of 862 students (501 male and female 361) entering in the first half of 2008, the Federal University of Santa Catarina-UFSC have noted the prevalence of overweight and obesity of

12.4% in men and 1.7% in women.¹⁷

Another study, conducted this time in Vale do Araguaia-MT 487 students were evaluated, and the prevalence of overweight students was 22.9% for men and 9.6% for women, the data of a research conducted in a public University in the State of Piauí in the Northeast region, where the values for overweight men were 24.0% and 7.6% women.^{18,8}

A study that sought to determine the dietary habits and lifestyle of 384 students from a private University of medicine in Karachi - Pakistan (53.4% male students and 46.6% female) found in its results that 58.3% of the students were of normal weight and 41.7% had overweight. Although the females being more concerned with weight gain, using strategies to control it, no significant difference was found between the male and female students when the eating habits and lifestyle.¹⁹

When they analyzed the data for the overweight according to the course, identified the prevalence of Overweight/obesity in 42.3% of management students, 15.4% in nursing academic, 16.0% among students of biology and 25.0% in pedagogy ($p = 0.2114$). However, the prevalence of the present study was different from a survey that assessed the nutritional status of 253 students, entering in health courses at the University of Pernambuco (UPE)-Recife/PE, where he found that overweight was present at 5.25% in biological sciences and 14.63% in nursing students.²⁰

Specifically to the nursing course, the comparison of the present data with a study in Fortaleza-CE. Researchers investigated the prevalence of risk factors for type 2 diabetes mellitus among nursing students and 99 found a large portion of the sample with overweight, 46.5%. In addition, 74.7% of students were considered physically inactive. What can be concluded before such data is that in research conducted in the State of Ceará, the prevalence of overweight and obesity in students of nursing was substantially greater than found in the State of Piauí in the Northeast region. This difference is consistent with the idea that being overweight is directly linked to habits, eating habits and physical activity of each region.²¹

With respect to the period studied, it was observed in this investigation that the overweight has increased considerably from the first to the second year of the course. However, there was no statistically significant Association ($p = 0.7516$). Similar results were

found in another study done by medical students from the University of Ciências da Saúde de Alagoas (UNCISAL) evaluating academics from 1st to 6th year of medical school, a total of 120 people, with 104 men and 16 women, the authors found that the prevalence of overweight were: 1st year-18.75%; 2nd year-47.4%; 3rd year-52.6%, among students of medicine, considering the trend of increase in body weight found in studies by universities according to the years of study in colleges.²²

Research conducted in the United States in a public University found that 70% of students gained weight, without a substantial difference in dietary habits and behaviors indicating exercise, between the first and second year of College. Among the reasons for this are weight gain, changes in body composition, body fat gain and lack of care with food and physical activity practices. 9 related to these weight gains, are unsuitable as life habits: alcoholism, smoking, high fat feeding and lack of adherence to physical activity by students, increasing the risk for chronic non-communicable diseases.²³

CONCLUSION

It can be concluded with the present study that the prevalence of overweight and obesity students was high (24.8%), being more prevalent in males (44.4%), students belonging to the course of Bachelor of business administration (42.3%) and academics from 2^o year of the course. This puts them at risk for the development of various harms to health, since there is a correlation between obesity and a host of degenerative diseases, like hypertension and diabetes mellitus type 2. The young population, represented by University students, is not free from inappropriate habits of life. What is encouraging to them is the adoption of healthy habits as a balanced diet and exercise routine of these students, in order to reduce excess weight. In addition, further studies should be carried out, especially those focused on the methods of intervention. Preventive and educational measures must always be widely diffused among academics in order to decrease the incidence of harms to health.

REFERENCES

1. World Health Organization [Internet]. Global strategy on diet, physical activity and health: documents related to overweight and obesity. Fact sheet on Obesity and overweight; [updated 2012 May; cited 2012

May 25]. World Health Organization; [about 4 screens]. Available from: <http://www.who.int/mediacentre/factsheets/fs311/en/index.html>

2. World Health Organization. World Health Statistics 2012. Geneva: WHO; 2012. 176 p.

3. Pender JR, Pories WJ. Epidemiology of obesity in the United States. *Gastroenterol Clin North Am.* 2005 Mar; 34(1):1-7.

4. Instituto Brasileiro de Geografia e Estatística. Pesquisa de Orçamentos Familiares 2002-2003: análise da disponibilidade domiciliar de alimentos e do estado nutricional no Brasil. Brasília: Ministério do Planejamento, Orçamento e Gestão; 2004. 76 p.

5. Vigitel Brasil 2011: vigilância de fatores de risco e proteção para doenças crônicas por inquérito telefônico. Brasília: Ministério da Saúde; 2011. 147 p.

6. Mendonça CP, Anjos LA. Aspectos das práticas alimentares e da atividade física como determinantes do crescimento do sobrepeso/obesidade no Brasil. *Cad Saúde Pública.* 2004 May-June; 20(3):698-709.

7. Nelson MC, Story M, Larson NI, Neumark-Sztainer D, Lytle LA. Emerging adulthood and college-aged youth: an overlooked age for weight-related behavior change. *Obesity (Silver Spring).* 2008 Oct; 16(10):2205-11.

8. Martins MCC, Ricarte IF, Rocha CHL, Maia RB, Silva VB, Veras AB, et al. Pressão Arterial, Excesso de Peso e Nível de Atividade Física em Estudantes de Universidade Pública. *Arq Bras Cardiol.* 2010 Aug; 95(2):192-9.

9. Racette SB, Deusinger SS, Strube MJ, Highstein GR, Deusinger RH. Weight changes, exercise and dietary patterns during freshman and sophomore years of college. *J Am Col Health.* 2005 May-June; 53(6):245-51.

10. American College Health Association. National College Health Assessments. Fall 2011 Reference Group Executive Summary. Hanover: American College Health Association; 2012. 19 p.

11. Goto M, Kiyohara K, Kawamura T. Lifestyle risk factors for overweight in Japanese male college students. *Public Health Nutr.* 2010 Oct; 13(10):1575-80.

12. Trujillo-Hernández B, Vásquez C, Almanza-Silva JR, Jaramillo-Virgen ME, Mellin-Landa TE, Valle-Figueroa OB, et al. Frecuencia y factores de riesgo asociados a sobrepeso y obesidad en universitarios de Colima, México. *Rev Salud Pública.* 2010 Apr; 12(2):197-207.

13. World Health Organization. Physical status: the use and interpretation of anthropometry. Geneva: World Health Organization; 1995. 462 p.

14. Brasil. Ministério da Saúde. Conselho Nacional de Saúde: Resolução N° 196/96 - Normas regulamentadoras de pesquisa envolvendo seres humanos. Brasília: Ministério da Saúde; 1996.

15. Falcão VTFL, Miranda ML, Silva RMC. Prevalência de obesidade e sobrepeso entre os universitários do campus de saúde da Universidade de Pernambuco. *Rev RENE.* 2007; 8(3):17-25.

16. Instituto Brasileiro de Geografia e Estatística. Pesquisa de Orçamentos Familiares 2008-2009: avaliação nutricional da disponibilidade domiciliar de alimentos no Brasil. Brasília: Ministério do Planejamento, Orçamento e Gestão; 2010. 54 p.

17. Madureira AS, Corseuil HX, Pelegrini A, Petroski EL. Associação entre estágios de mudança de comportamento relacionados à atividade física e estado nutricional em universitários. *Cad Saúde Pública.* 2009; 25(10):2139-46.

18. Toledo OR, Castro JAM, Honório-França AC, França EL, Ferrari CKB. Uso de medicamentos para perda de peso e índice de massa corporal em universitários do Vale do Araguaia (MT/GO). *Rev Soc Bras Clín Méd.* 2010 Nov-Dec; 8(6):480-5.

19. Nisar N, Qadri MH, Fatima K, Perveen S. Dietary habits and life style among the students of a private medical university Karachi. *J Pak Med Assoc.* 2009 Dec; 59(2):98-101.

20. Paixão LA, Dias RMR, Prado WL. Estilo de vida e estado nutricional de universitários ingressantes em cursos da área de saúde do Recife/PE. *Rev Bras Ativ Fís Saúde.* 2010 July-Sept; 15(3):145-50.

21. Silva LR, Silveira SS, Freitas RWJF, Sousa VEC, Barbosa ICFJ, Damasceno MMC. Fatores de risco para diabetes mellitus tipo 2 em estudantes de enfermagem. *Rev Enferm UFPE on line.* 2011 May; 5(3):757-63.

22. Lessa SS, Montenegro AC. Avaliação da prevalência de sobrepeso, do perfil nutricional e do nível de atividade física nos estudantes de medicina da Universidade de Ciências da Saúde de Alagoas - UNCISAL. *Rev Soc Bras Clín Méd.* 2008; 6(3):90-3.

23. Silva DAS, Quadros TMB, Gordia AP, Petroski EL. Associação do sobrepeso com variáveis sócio-demográficas e estilo de vida em universitários. *Ciênc Saúde Coletiva.* 2011; 16(11):4473-9.

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