ANTHROPOMETRIC PROFILE AND LIFESTYLE IN NURSING STUDENTS
PERFIL ANTROPOMÉTRICO E ESTILO DE VIDA EM ESTUDANTES DE ENFERMAGEM
PERFIL ANTROPOMÉTRICO Y ESTILO DE VIDA EN ESTUDIANTES DE ENFERMERÍA

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ABSTRACT

Objective: to verify the association of the anthropometric profile, the lifestyle, the physical activity level and the blood pressure of nursing students. **Method:** This is a quantitative, descriptive, cross-sectional epidemiological study, with 109 students. Statistical data were analyzed and processed: analysis of variance (ANOVA) with logistic regression method and the statistical program BioEstat 5.3. The results were shown in tables. **Results:** the prevalence of normal blood pressure and the high lifestyle, weight and waist circumference were evidenced. However, the predominance of irregular eating habits and sedentary lifestyle were observed. Individuals with irregular eating habits are 6.98 times more likely to develop high blood pressure than those with regular habits, and sedentary individuals are 4.27 times more likely to develop high blood pressure than those who are physically active. **Conclusion:** The results corroborate other studies, highlighting the primary importance of physical activity and regular eating habits in the health-disease process of any individual, especially in the fight against the development of CNCD. **Descriptors:** Nursing; Anthropometry; Health promotion; Lifestyle; Students, Nursing; Chronic Disease.

RESUMO

Objetivo: verificar a associação perfil antropométrico, o estilo de vida, o nível de atividade física e a pressão arterial de estudantes de Enfermagem. **Método:** trata-se de estudo quantitativo, descritivo, epidemiológico transversal, com 109 estudantes. Analisaram-se e se processaram os dados por meio estatístico: análise de variância (ANOVA) com método de regressão logística e o programa estatístico BioEstat 5.3. Apresentaram-se os resultados em tabelas. **Resultados:** evidenciou-se a prevalência de pressão arterial normal, bem como alto estilo de vida, peso e circunferência da cintura normais, no entanto, observou-se a predominância de hábitos alimentares irregulares e sedentarismo. Revela-se que sujeitos com hábitos alimentares irregulares têm 6,98 mais chances de desenvolver pressão alta do que aqueles com hábitos regulares, e sujeitos sedentários têm 4,27 mais chances de desenvolver pressão alta em relação aos que são fisicamente ativos. **Conclusão:** percebe-se que os resultados corroboram outros estudos, trazendo à tona a importância primordial da atividade física e hábitos alimentares regulares no processo saúde-doença de qualquer indivíduo, principalmente na luta contra o desenvolvimento de DCNT. **Descritores:** Enfermagem; Antropometria; Promoção da Saúde; Estilo de Vida; Estudantes de Enfermagem; Doença Crônica.

RESUMEN

Objetivo: verificar la asociación del perfil antropométrico, el estilo de vida, el nivel de actividad física y la presión arterial de estudiantes de Enfermería. **Método:** se trata de un estudio cuantitativo, descriptivo, epidemiológico transversal, con 109 estudiantes. Se analizaron y se procesaron los datos por medio estadístico: análisis de variancia (ANOVA) con método de regresión logística y el programa estadístico BioEstat 5.3. Se presentaron los resultados en tablas. **Resultados:** se observó la prevalencia de presión arterial normal, así como alto estilo de vida, peso y circunferencia de la cintura normales, sin embargo, se observó la predominancia de hábitos alimentares irregulares y sedentarismo. Se revela que individuos con hábitos alimentares irregulares tienen 6,98 más chances de desarrollar presión alta de lo que aquellos con hábitos regulares, e individuos sedentarios tienen 4,27 más chances de desarrollar presión alta en relación a los que son fisicamente activos. **Conclusión:** se observa que los resultados corroboran otros estudios, mostrando la importancia primordial de la actividad física y hábitos alimentares regulares en el proceso salud-enfermedad de cualquier individuo, principalmente en la lucha contra el desarrollo de DCNT. **Descriptores:** Enfermería; Antropometría; Promoción de la Salud; Estilo de Vida; Estudiantes de Enfermería; Enfermedad Crónica.

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INTRODUCTION

According to the World Health Organization (WHO), throughout the world, chronic noncommunicable diseases have become an epidemiological standard, bringing the most diverse impacts, in terms of productivity, quality of life and functionality of the patients, since, in addition to resulting in morbidity and mortality, chronic diseases increase, at significant levels, the health costs of the most diverse countries.¹⁻²

Data from the Ministry of Health reported that in Brazil, approximately 800,000 Brazilians die each year from CNCD, with cardiovascular diseases coming first, followed by cancer and chronic respiratory diseases.³

The number of deaths due to CNCD can be significantly reduced by government policies aimed at restricting tobacco consumption, harmful alcohol consumption, unhealthy diets, inactivity, and universal health coverage.¹⁻⁴

In Brazil, for example, there is a reduction in the mortality rate due to CNCD, which is 1.8% per year, thus the expansion of primary health care. However, educational practices in health are adopted, using health promotion and prevention, especially in susceptible people, becoming an important protection factor for them and helping to reduce Brazilian and world rates.¹⁻⁵

The control of CNCDs is controlled by a care with food, in addition to the practice of physical exercises, and is also often performed with the intervention of medication. The commitment of the patient is of paramount importance for the combat and control of these diseases, and the Theory of Self-care becomes very pertinent in this case.³⁻⁶

According to theorist Dorothea E. Orem, the individual should perform practices for the benefit of his own health, being responsible for promoting the health well-being and self-esteem. The applicability of the theory of self-care is determined and fundamental knowledge is required, such as knowing the health problems, the forms of treatment, and the measures to promote and prevent the disease.³⁻⁷

With the admission of young people in universities, they are susceptible to changes in healthy habits due to the new responsibilities that are obtained by changing the focus that was previously focused on the primary needs, passing through the responsibilities of the academic world. Thus, a decline in the almost simultaneous quality of life is observed, where food becomes unbalanced and physical activities, scarce, offering opportunities to various pathologies.⁸⁻⁹

There are several changes undergone by university students, such as routine change, unbalanced diet, physical inactivity and even sociocultural, genetic and endocrine factors, to the restlessness to know more about their state of

health linked to their new habits, which may reflect on their anthropometric indexes. Through this work, it is sought to ascertain the current health of young students.¹⁰⁻¹

This study becomes of great importance to the scientific and academic community enabling a critical and directed look at the student focus of higher education institutions. Possible prophylaxis, for example, to prevent systemic arterial hypertension (SAH), obesity, among others, is investigated, analyzed and proposed, since they are silent epidemiological phenomena that need to be highlighted.

It is important to deepen the understanding of the association of measures routinely used by clinical practice, such as anthropometry, an alternative for blood pressure screening and altered nutritional indexes. Anthropometric measurements are beneficial in the evaluation because they are obtained easily and at low cost and, even in large populations, are indicators of cardiovascular risk.⁵⁻¹²

This is an unprecedented study in the presented standards and aims at helping, in a cohesive way, the measures and care to be taken before those involved, giving greater contribution to the academic community, informing and subsidizing tools for self-care.

OBJECTIVE

- To check the association of the anthropometric profile, the lifestyle, the physical activity level and the blood pressure of nursing students.

METHOD

This is a quantitative, descriptive, cross-sectional epidemiological study. The sample was composed by 109 undergraduate students of the Nursing Bachelor's degree course at the Federal University of Vale do São Francisco in Petrolina (PE), Brazil. The data collection was carried out in the second half of 2017.

Nursing students regularly enrolled in the Higher Education Institution (HEI), of both genders, young and adults, between 18 and 45 years old were included. Pregnant women, people taking antihypertensive drugs for at least two weeks, people with pain of any intensity at the time of the evaluation, or who reported ingestion of alcohol, coffee or physical activity up to 30 minutes before the start collection were excluded.

The following instruments were used to collect data: 1) Socioeconomic Questionnaire; 2) "Fantastic Lifestyle" Questionnaire; 3) Short version of the International Questionnaire of Physical Activity - IPAQ; 4) Anthropometric measures (weight, height and waist circumference) and 5) measurement of systemic arterial pressure. The last two items were performed according to the rules of the Manual of

Anthropometry prepared together with the Brazilian Institute of Geography and Statistics (IBGE) and the Ministry of Health.¹³

The data obtained in the statistical program BioEstat, version 5.3, were transcribed into tables and graphs containing the general stratification of the studied population, the anthropometric profile, the level of physical activity and the lifestyle, as well as the correlation of the information obtained.

The data were analyzed by descriptive statistical means, with standard and mean deviation, minimum and maximum values, adopting the percentage distribution. An analysis of variance (ANOVA) was used to estimate the descriptive characteristics of the individuals. The main objective was to verify if there is a significant difference between the means and if the factors influence some dependent variable.

The logistic regression method was used to calculate Odds Ratios (OR) (using theoretical assumptions of 2 x 2 table) between the dependent variable of Blood Pressure (BP) and the independent variables: Physical Activity Level (PAL) and Lifestyle (LS). The variables were

organized during the analysis and according to the steps described above. Variables such as gender, age, and Body Mass Index (BMI) were calculated with the adjusted OR, since they may influence possible variables.

The research was approved through the Committee of Ethics and Deontology in Studies and Research (CEDEP) of the Federal University of Vale do São Francisco (UNIVASF) and through CAAE nº 44291715.6.0000.5196, receiving favorable opinion with the number 1,214,073.

RESULTS

The participants were 109 nursing students from the Federal University of Vale do São Francisco, in Petrolina/PE.

Table 1. Socioeconomic characteristics of the sample studied by gender. Petrolina (PE), Brazil, 2017.

	Gender		Female		
	Male	N (%)	N (%)		
Characteristics (N=109)	28	26%	81	74%	Total N (%)
Age group (years old)					
Between 18 and 25	21	19.3%	67	61.4%	88 (80.7%)
Between 26 and 33	07	6.5%	09	8.2%	16 (14.7%)
Between 34 and 41	00	0%	04	3.7%	04 (3.7%)
Between 41 and 45	00	0%	01	0.9%	01 (0.9%)
Marital status					
Single	28	25.7%	77	70.6%	105 (95.3%)
Married	0	0%	04	3.7%	04 (3.7%)
Separated	0	0%	0	0%	0 (0%)
Widow	0	0%	0	0%	0 (0%)
Job situation					
Only studing	24	22%	65	59.6%	89 (81.6%)
Studying and working informally	04	3.7%	14	12.9%	18 (16.6%)
Studying and working formally	0	0%	02	1.8%	2 (1.8%)
Living with:					
Parents	08	7.4%	43	39.5%	51 (46.9%)
Family members	02	1.8%	08	7.3%	10 (9.1%)
Friends	16	14.7%	13	11.9%	29 (26.6%)
Living alone	02	1.8%	17	15.6%	19 (17.4%)
Family income					
Up to 1 minimum wage	04	3.7%	01	0.9%	05 (4.6%)
From 1 to 2 minimum wages	20	18.3%	34	31.2%	54 (49.5%)
From 2 to 5 minimum wages	01	0.9%	29	26.6%	30 (27.5%)
More than 5 minimum wages	03	2.8%	17	15.6%	20 (18.4%)

Table 2. Anthropometric profile of the sample surveyed with its respective mean and standard deviation (SD). Petrolina (PE), Brazil, 2017.

Anthropometric profile	Mean ± sd
Weight (kg)	65,3 ± 14,2 (42,8 - 103,6)
Height (cm)	159,0 ± 7,9 (150,0 - 187,0)
BMI (kg.m ² (-1))	23,8 ± 4,7 (16,6 - 34,9)
WC (cm)	76,0 ± 12,7 (47,0 - 104,0)

Although the gender differences were not considered, the calculated averages allow affirming that the participating university students

were within the norms of normality for young people/adults.⁶

Table 3. General stratification of the variables for CNCD risk. Petrolina (PE), Brazil, 2017.

Variáveis	Estratificação	n (%)
Blood pressure (BP)	Normal BP (<120x80 mmHg)	81 (74.3%)
	High BP (>120x80 mmHg)	28 (25.7%)
Eating habits (EA)	Regular EA	32 (29.4%)
	Irregular EA	77 (70.6%)
Physical Activity Level (PAN)	Physically active	44 (40.3%)
	Sedentary	65 (59.7%)
Lifestyle (LS)	High LS	79 (72.5%)
	Low LS	30 (27.5%)
Body mass index (BMI)	Normal weight	69 (63.3%)
	Overweight	40 (36.7%)
Waist Circumference (WC)	Normal	86 (78.9%)
	High	23 (21.1%)

It was considered the number of participants and the data collected in table 3, by dichotomizing the findings to better classify and obtain a less fragmented, denser and more reliable picture, with only two strata being obtained from each variable.

Among the stratifications observed in Table 3, it is important to highlight the positive prevalence of normal BP in the sample, as well as high LS, normal weight and normal WC. However, there is

a predominance of irregular BP and sedentary lifestyle.

Table 4 shows the results obtained from Odds Ratio between irregular, sedentary, low LS, overweight and high WC vs. High BP and, adjusting for gender, age and BMI, two significant associations were found between irregular BP vs. High BP (OR = 6.96, P <0.0001) and Sedentary vs. High BP (OR = 4.27, P <0.0001).

Table 4. Odds Ratios (OR) and 95% Confidence Intervals (CI) among students with Irregular, Sedentary, Low LS, Overweight, High WC and high BP. Petrolina (PE), Brazil, 2017.

V.I.	V.D.	OR ^a	C.I. 95%	P-value
Irregular BP	High BP	1.00 ^b 6.96	3.8 - 12.6	<0.0001
Sedentary	High BP	1.00 ^b 4.27	2.40 - 7.59	<0.0001
Low LS	High BP	1.00 ^b 1.09	0.60 - 2.00	0.8782
Overweight	High BP	1.00 ^b 1.67	0.90 - 2.99	0.1078
High WC	High BP	1.00 ^b 0.77	0.41 - 1.45	0.5222

^aAdjusted for covariates gender, age and body mass index; ^bReference category.

DISCUSSION

The association between the anthropometric profile, lifestyle, physical activity level and blood pressure of nursing students was analyzed and the chances of these variables predicting the risk of hypertension in the academic population were examined.

For young people, being in the university is a critical period for the development of cardiovascular risk factors because of the routine

change and adoption of unhealthy habits in their daily life, with a consequence for their health, recommendations to improve the quality of life to avoid unfavorable outcomes as the age grows.¹⁴

The detection of overweight and high abdominal circumferences in university students is highlighted, mainly due to the way of life taken by this people, since they are individuals who often leave the comfort of their homes and become living with colleagues or alone, as shown in table 1, failing to have a healthy diet, do not eat at the

correct times and work or study at night and also have to eat in a practical way with canned, fried or fast-foods, which facilitates overweight and increases adiposity and body perimeters.⁸⁻⁹

When comparing the data collected and exposed in table 5, it was observed that a large portion of the sample has a deficit in eating habits and physical activity level. The prevalence of adequate blood pressure levels was evident in relation to BP, even with the presence of variables with inadequate standards, since factors such as feeding and genetics influence these levels, however, they were not evaluated because they are not the focus of the study.

The relevance of these data is highlighted since even with blood pressure values within the normal range, this people becomes vulnerable to the physiological and metabolic changes that occur over the years and may develop cardiovascular disorders, such as hypertension and Diabetes Mellitus, although they can work preventively on the conditions that protect against these events, such as physical exercise and regular healthy eating.

The association presented in table 4 showed that individuals with irregular BP have 6.96 more chances to develop high BP than those with regular BP and sedentary individuals have 4.27 more chances to develop high BP than those who are physically active.

However, it was confirmed that no statistical significance was found when associating LS, BMI and WC to high BP and, when observing the findings, the least likely association was the relation between high WC and high BP and the lower significance was between low LS and high BP.

Studies showed the relevance of WC in the prevalence of high BP, however, it has already been established that there are divergences in different populations due to genetic factors, body composition, among others, making the finding of this study short of variables and therefore making them unlikely.

It is revealed that the LS was not significant as a predictor of high BP, since it was quantified by the FANTASTIC questionnaire whose evaluation encompasses several physical, emotional, social, and other aspects, and which, together, they mask variables that are actually predictive of high BP.

In the face of these findings, it is concluded that physical inactivity is associated with numerous chronic vascular conditions and, even, premature death, and the benefits of physical exercise are irrefutable for health such as their combination with the adoption of healthy eating habits.¹⁵

The benefits of physical activity are shown in studies not only to reduce blood pressure but also to reduce blood glucose and stress levels, which

have not been studied in this study but which are important risk for the development of CNCDS.¹⁶

Research in this area is necessary for directing strategies aimed at the promotion and prevention of health and also the control of CNCDS, associating the incentive of regular practice of physical exercise with changes in diet.¹⁷ In this sense, universities have an important role to play, promoting a healthy environment, collaborating in the formation of individuals mobilized with the importance of healthy eating and regular practice physical activity for their well-being, effectively forming multipliers of this information in society.

The main limitation of the study was the use of the cross-sectional design, which does not allow identifying the precedence, in time, between the exposure and the outcome. Another limitation was the fact that the assessment of the cutoff points of anthropometric indices was performed exclusively in the high blood pressure, leaving other diseases associated with obesity, such as dyslipidemia and Diabetes Mellitus, absent in this study.

CONCLUSION

It contributes with data previously unknown to the students surveyed, with information about their anthropometric profile, level of physical activity and lifestyle, corroborating other similar studies and bringing up the primordial importance of physical activity in the health-disease process of any individual, especially in the struggle to prevent the development of CNCDS.

Through statistical data, the research showed that regardless of anthropometric profile and lifestyle, physical exercise is the most important thing for health promotion and prevention, including a method of easier access and execution by the general population.

Monitoring students' quality of life, assessing the risk variables for the development of CNCDS during graduation are suggested, and may provide protection against innumerable related endocrine and metabolic complications, with a favorable repercussion on the high cardiovascular morbidity and mortality rates currently observed.

It is fundamentally emphasized that the identification of these problems, in a preventive way, will reduce the costs directly of the health services, avoiding that future complication will threaten and lead these students to seek the services.

Thus, in view of the need for early identification and correction of multiple cardiovascular risk factors, especially in young adulthood, any preventive and healthy life-promoting interventions may have a significant impact on the reduction of CNCDS.

Therefore, it is concluded that the academic people of the universities of the whole country is immense and they should be the focus of research

that prove the risks before the problems of public health, so measures are thought and carried out for the health of this people who, in the future, may need public spending if promotion and prevention are not taken in advance.

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