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RISK FACTORS FOR CHRONIC NONCOMMUNICABLE DISEASES IN UNIVERSITY STUDENTS

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ABSTRACT
Cross-sectional study aimed to identify the frequency of risk factors for chronic diseases in 206 nursing students of a public institution of higher education in Piauí. Data were collected through a form, as well as anthropometric measurements and blood pressure. Statistical analysis was performed using the Pearson Chi-Square test, with significance level of 5%. Most study individuals were women (75.2%); the mean age was 21.38 years; 53.4% stated they were browns; 95.6% were single; 51% did not live with the family; 87.4% are economically included in classes B and C. It was found that 21.8% were overweight; 163 (79.1%) were inactive; and only 3% were smokers. Central obesity was found in 23.8% of university students, with a higher proportion among women. The frequency of alcohol consumption and high blood pressure was 51.9% and 9.7%, respectively, and both variables were higher for men. Considering the knowledge of these risk factors we emphasize the need for more effective actions to control these factors in the study group, such as, controlling body weight and alcohol use, encouraging physical activity; and controlling blood pressure values.

Keywords: Chronic Diseases. Nursing students. Risk Factors.

INTRODUCTION

The Noncommunicable Chronic Diseases (NCDs) have multifactorial etiology, and the process of atherosclerosis begins early in life, with latency between exposure to risk factors and the late manifestation of cardiovascular diseases.

In addition, excess weight, high blood pressure, smoking, excessive alcohol consumption, physical inactivity, inadequate consumption of fruits and vegetables and hyperglycemia represent 45.9% of the global burden of risk factors for NCDs[1,2].

Dealing with NCD is primarily related to four main risk factors: smoking, physical inactivity, unhealthy diet and harmful use of alcohol. Smoking accounts for nearly 10% of the cases of cardiovascular disease. Physical inactivity increases by 20% to 30% mortality risk. The feeding standards adopted in recent decades may be harmful in several ways. Among the deaths caused by alcohol, it is estimated that more than 50% are due to NCDs[1].

A longitudinal study involving 154 undergraduate students at the University of Aveiro, Portugal, concluded that even the high level of education seems to have a protective role in terms of the adoption of a healthy lifestyle. Involvement in the areas of health does not change the behavior of students either. Such evidences suggest that the higher level of education is not related to a healthy lifestyle, even when they are students enrolled in areas of health[3]. Another study in the city of Teresina, PI shows that information on the prevalence of risk factors for NCDs can contribute to the planning of preventive actions[4].

For intervention in such risky conditions, knowledge related to the magnitude of these risks and the distribution of information to the

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population is imposed due to its extreme importance. In this context, the university area became a privileged, feasible and appropriate place to obtain representative information on these risk factors; however, these data are still not available to the university students in the Northeast region of Brazil.

The objective of this study was to identify risk factors for NCDs in university students.

METHODOLOGY

This is a descriptive cross-sectional study, conducted in a public university in the city of Picos/IP. The study population consisted of all students, that is, 439 students properly enrolled in the nursing program of the institution in 2012. We used a finite population formula to calculate the sample, which is composed of 206 students of both sexes and distributed in nine strata ordered according to the periods of the course, to ensure their representation. Participants under 18 years of age and those with a confirmed diagnosis of any NCD were excluded.

Data collection took place in room reserved for this purpose, within the institution, in March and April 2012. The researchers used a semi-structured form covering the socio-demographic variables (age, sex, marital status, self-reported color, people with whom they live, and socioeconomic status), physical activity, smoking, alcohol consumption, anthropometric measurements and blood pressure (BP).

We classified the economic condition in accordance to the criteria of the Brazilian Association of Research Companies (ABEP)[5]. Regarding physical activity, we regarded as sedentary the individuals who did not practice mild or moderate activity for at least 30 minutes a day, for a minimum of five days a week; or 20 minutes of vigorous activity a day for three or more days per week[6].

Anthropometric measurements were performed with the student barefoot and wearing light clothes. The weight was measured on a portable scale, with an accuracy of 0.1 kg, and height was measured with a measuring tape to the nearest 0.5 cm, fixed vertically on a flat wall. Waist circumference (WC) was obtained by using a tape measure, with a scale of 0.5cm, placed without pressure, between the bottom of the last rib and the iliac crest of participants.

Nutritional status was classified according to body mass index (BMI) as normal (BMI between 18.5 and 24.9 kg/m²); overweight (BMI of 25 to 29.9 kg/m²); and obesity (BMI ≥ 30 kg/m²). The expression overweight was used to refer to individuals with excess weight or obesity (BMI ≥ 25 kg/m²)[7]. We analyzed the WC considering the risk of developing metabolic complications, setting: no risk (men <94 cm, women <80 cm); increased risk (men ≥ 94 cm, women ≥ 80 cm); and greatly increased risk (men ≥ 102 cm, women ≥ 88 cm)[8].

Blood pressure was determined in accordance with the recommendations of the VI Brazilian Guidelines on Hypertension; therefore participants were at rest for at least five minutes in a quiet environment and were instructed not to talk during the measurement. The authors attest that individuals did not have a full bladder, had not had performed any physical exercise for at least 60 minutes, had not consumed alcohol, coffee or food and had not smoked in the previous 30 minutes. For verification, we used a stethoscope and a properly calibrated aneroid sphygmomanometer, placed two to three inches above the antecubital fossa and the width of the rubber bag corresponding to 40% of the arm circumference and its length. Blood pressure was measured three times at a five minute interval between each check, considering the average obtained in the last two checks. The classification of results occurred in accordance with the following references: excellent pressure levels (<120 x 80 mmHg); normal levels (<130 x 85 mmHg); threshold levels (130-139 x 85-89 mmHg), hypertension stage 1 (140-159 x 90-99 mm Hg), hypertension stage 2 (160-179 x 100-109 mmHg), hypertension stage 3 (≥180 ≥110 x mmHg), and isolated systolic hypertension (≥140 x <90 mm Hg)[8].

As for smoking, the students were classified into four categories: daily smokers, occasional smokers, former smokers and non-smokers. Daily smokers were those who smoked at least one cigarette per day for at least one month before completing the questionnaire; occasional smokers, those who did not smoke daily; ex-smokers, those who, after having been smokers, had quit smoking for at least one month; and the non-smokers were those who had never smoked or had smoked for less than a month[9].

With regard to alcohol consumption, we used as the measuring instrument the Alcohol Use Disorders Identification Test (AUDIT)[10], which is a 10-question test developed by the WHO as a screening instrument specifically designed to identify individuals with harmful use of alcohol, as well as those having substance dependence.

The data were processed using the Statistical Package for the Social Sciences (SPSS) version 17.0. The statistical analysis for associations between the variables studied was performed using the Pearson Chi-Square test. A significance level of 5% ($p<0.05$) was established.

The study was conducted in compliance with the requirements presented in Resolution 466/12 of the National Health Council (CNS), about the ethical issues of research involving human subjects. The study participants signed the Consent and Informed Term after being informed of the research objectives, as well as the possible risks and benefits. The study protocol was approved by the Research Ethics Committee of the Federal University of Piauí (UFPI) as the CAAE Protocol 0427.0.045.000-11.

RESULTS AND DISCUSSION

Two hundred and six university students of both sexes were evaluated and 75.2% were female. Participants were aged between 18 and 40 years, with an average of 21.38 years (±3.22). Most students said they were brown (53.4%); single (95.6%) and did not live with the family (51%). With regard to the economic status, they were concentrated in classes B and C (87.4%).

The socio-demographic data of the study population are similar to those found in a research carried out with university students, in which 55.9% were female, with a mean age of 22.3 years, 90.6% were single, 30.7% studied and worked, but it was observed that most lived with the family (75.1%). For the present study, 51% of participants did not live with their parents, a fact that can be explained by the students flow from other cities and even other states in the institution where the research was conducted.

Table 1 shows the sample distribution according to the analyzed risk factors and their relation to the sex of the students.

The assessment of the nutritional status by means of BMI found that 21.8% of students were overweight.

The prevalence of overweight is similar to that evidenced in other surveys conducted with university students in Brazil[4.11].

The body fat accumulation has shown high prevalence of risk factors for cardiovascular disease and is directly associated with increased blood pressure. It has a cause and effect relationship between increased body mass and increased blood pressure[4].

A study involving 145 hypertensive patients found overweight and obesity in 75.2% of the sample, and the coexistence of risk factors such as smoking (27.6%) and physical inactivity (57.9%), among others. 91.1% of these participants suffered with hypertension. The study confirms that excess weight is an important predictor of cardiovascular diseases in different populations[12]. Increased WC was found in 23.8% of the university students. The comparison of WC with the sex of the students showed greater proportion of increased waist circumference among women with 24.5% ($p=0.004$), unlike a study conducted among students of a public university, which did not show correlation between abdominal obesity and sex[4]. Nevertheless, the results presented here follow the national trend, as observed in studies with adults, in which women show greater predisposition to abdominal obesity[13].

Regarding blood pressure levels, of the total individuals surveyed, 9.7% had blood

pressure levels above the normal range, and men expressed BP levels higher than those of women (p = 0.000). Studies have shown a higher prevalence of men with uncontrolled blood pressure when compared to women[4.13], as opposed to a study carried out in São Paulo[14] that found no difference in the prevalence of hypertension among genres. The findings of a higher proportion of high blood pressure in males can be justified by the fact that it is a population with a mean age of 21.38 ± 3.22 years, since global estimates suggest higher rates of hypertension for men up 50 years of age, and for women from the sixth decade.

With regard to physical activity, 79.3% of women and 78.4% of men were considered sedentary. The frequency of physical inactivity found is high compared to other studies involving college students, ranging between 31.2% and 77.2%[4,11,15]. A study involving students at the same university in other campuses has identified that 52% did not practice physical activity on a regular basis. These pointed as possible inactivity causes the lack of time also due to work in 38.2% of cases[4]. These results are similar to this study, in which 30.7% of the students also worked, which can decrease the time for regular physical activity.

Table 1. Distribution of modifiable risk factors for chronic diseases according to sex. Picos, 2012.

Variables	Male		Female		p*
	n	%	N	%	
IMC					
Normal	31	60,8	130	83,9	0,235
Overweight	20	39,2	25	16,1	
CC					
Normal	40	78,4	117	75,5	0,004
High	11	21,6	38	24,5	
PA					
Normal	34	66,7	152	98,1	0,000
High	17	33,3	03	1,9	
Physical activity					
Sedentary	40	78,4	123	79,3	0,888
Non sedentary	11	21,6	32	20,7	
Alcoholic beverages					
Consumed	41	80,4	66	42,6	0,000
Not consumed	10	19,6	89	57,4	
Smoking					
Smoker	03	5,9	03	1,9	0,348
Non Smoker	48	94,1	152	98,1	

*p= Pearson Chi-Square test; BMI = body mass index; WC = Waist Circumference; BP = Blood Pressure
Source: Author's data.

Sedentary people are more likely to develop hypertension when compared to physically active people. Physical inactivity is associated with various diseases and adverse metabolic conditions, such as obesity, type 2 diabetes mellitus and changes in the lipid profile.

In respect to smoking only 2.9% reported regular cigarette use. A study conducted comprising 300 adolescents from a public university in the south of the Brazil also found a low prevalence (4.3%) of smoking among college students, regardless of gender[16].

Another study conducted at the Federal University of Santa Catarina identified 5.9% of tobacco use. Such results suggest that respondents who entered the University by the affirmative action system had the lowest frequency of cigarette consumption. A lower incidence of smoking was also observed

among women and among the students from the Socioeconomic Center, when compared to those from Legal Sciences, Philosophy, Humanities and Education[17].

In 2014, Brazil had more than 2000 higher education institutions (HEIs), totaling more than 5.8 million students, which are considered vulnerable to risky practices for health, especially the abuse and dependence on alcohol and tobacco[19]. Brazilian studies show that using tobacco ranged from 14.7 to 34.5%, with age of onset between 15.1 to 17.0 years[18-19] and higher prevalence rates in students of Humanities courses[18].

Excessive consumption of alcohol is directly associated with increased risk of some cancers, liver disorders and cardiovascular diseases. In this study, 51.9% reported alcohol consumption, and the highest proportion was among male college students (80.4%) (p = 0.000). In literature, another research has shown similar data between university students as well as higher consumption among men[16]. In another study, 8% of the sample probably suffered with alcoholism, that is, had physical and psychological problems associated with alcohol, and 28% were at risk[20].

CONCLUSION

From the data analyzed, one can see that the university students present several risk factors for NCDs, such as waist circumference increased, changes in blood pressure, physical inactivity and alcohol use. These factors, when combined, expose them to the increased risk of developing cardiovascular complications. Regarding the variables waist circumference, blood pressure and alcohol use, there was a statistically significant association with sex.

These results are considered worrisome because it is a population with young age average. However, the risk factors identified in this study are related behavioral patterns and thus are prone to change. Therefore, it is necessary to encourage the adoption of healthy eating habits, the practice of regular physical activity and control of alcohol consumption. Such actions contribute to the reduction of non-communicable diseases and health problems at all stages of life.

As a limitation of this study, we highlight the fact that the sample was done only with nursing students, however, it is emphasized that these are future professionals and they study these risk factors. It is therefore expected that, since they have this knowledge, they could express an adequate quality of life based on practice, but it does not happen this way.

It is worth mentioning the need for further research to better understand the factors identified herein and other factors involved in the development of chronic diseases in order to assist the planning of professional actions and health services that integrate the Unified Health System (UHS).

FATORES DE RISCO PARA DOENÇAS CRÔNICAS NÃO TRANSMISSÍVEIS EM UNIVERSITÁRIOS

RESUMO

Estudo transversal cujo objetivo foi identificar a frequência de fatores de risco para doenças crônicas não transmissíveis em 206 acadêmicos de Enfermagem de uma instituição pública de ensino superior do Piauí. Os dados foram coletados por meio de um formulário, além de medidas antropométricas e de pressão arterial. Realizou-se análise estatística por meio do teste de Pearson Chi-Square, com nível de significância em 5%. Da amostra, 75,2% eram mulheres, média de idade de 21,38 anos; 53,4% se declararam pardos; 95,6% solteiros; e 51% não moravam com a família; 87,4% pertencem às classes econômicas B e C. Verificou-se que 21,8% estavam com excesso de peso; 163 (79,1%) eram sedentários e apenas 3% fumantes. A obesidade central foi encontrada em 23,8% dos universitários, com maior proporção entre as mulheres. A frequência no consumo de bebida alcoólica e os níveis pressóricos elevados foram de 51,9% e 9,7%, respectivamente, sendo ambas as variáveis maiores entre os homens. Considerando o conhecimento desses fatores de risco no grupo estudado, ressalta-se a necessidade de ações efetivas, tais como controlar o peso corporal e o uso do álcool, estimular a prática de atividade física e controlar os níveis pressóricos.

Palavras-chave: Doenças Crônicas. Estudantes de Enfermagem. Fatores de Risco.

FACTORES DE RIESGO PARA ENFERMEDADES CRÓNICAS NO TRANSMISIBLES EN UNIVERSITARIOS

RESUMEN

Estudio transversal cuyo objetivo fue identificar la frecuencia de factores de riesgo para las enfermedades crónicas no transmisibles en 206 estudiantes de Enfermería de una institución pública de educación superior en Piauí. Los datos fueron recolectados a través de un formulario, además de mediciones antropométricas y de presión arterial. Se realizó análisis estadístico mediante la prueba de Pearson Chi-Cuadrado, con un nivel de significación del 5%. De la muestra, 75,2% eran mujeres, promedio de edad de 21,38 años; el 53,4% se declaró pardo, el 95,6% era soltero; y el 51% no vivía con la familia; el 87,4% pertenece a la clase económica B y C. Se verificó que el 21,8% tenía sobrepeso; 163 (79,1%) eran inactivos, y sólo el 3% era fumador. La obesidad central se encontró en el 23,8% de los universitarios, con una proporción mayor entre las mujeres. La frecuencia en el consumo de bebida alcohólica y los niveles de la presión arterial elevados fueron de 51,9% y 9,7%, respectivamente, siendo las dos variables mayores para los hombres. Teniendo en cuenta el conocimiento de estos factores de riesgo en el grupo estudiado, se señala la necesidad de medidas más eficaces, tales como controlar el peso corporal y el consumo de alcohol, promover la actividad física y controlar los niveles de la presión arterial.

Palabras clave: Chronic Diseases. Nursing students. Risk Factors.

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