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Cardiovascular risk factors and quality of life of nursing students*

Fatores de risco cardiovascular e qualidade de vida de estudantes de enfermagem

Factores de riesgo cardiovascular y calidad de vida de estudiantes de enfermería

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Abstract: Objective: to identify cardiovascular risk factors and the perception of quality of life among nursing students from a federal university in Rio Grande do Sul, Brazil. **Method:** descriptive cross-sectional study, conducted with 131 nursing students, in 2018. Data were collected through an instrument for demographic and socioeconomic characterization, a form for identifying cardiovascular risk factors and the World Health Organization Quality of Life questionnaire, Bref (WHOQOL-BREF). In order to analyze data, we used descriptive statistics. **Results:** we found that 115 (87.8%) students had cardiovascular risk factors. As for quality of life, the average score was 70.1 (±17.0) for social relationships and 57.8 (±13.8) for the environment. **Conclusion:** there was a high prevalence of cardiovascular risk factors, with a prevalence of sedentariness and obesity. Still regarding the quality of life, the worst perception was related to the environment, while social relationships highlighted positive results.

Descriptors: Cardiovascular System; Quality of Life; Nursing; Students, nursing; Student Health

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Resumo: **Objetivo:** identificar os fatores de risco cardiovascular e a percepção da qualidade de vida entre estudantes de enfermagem de uma universidade federal do Rio Grande do Sul, Brasil. **Método:** estudo transversal descritivo, realizado com 131 estudantes de enfermagem, em 2018. Os dados foram coletados por meio de instrumento de caracterização demográfica e socioeconômica, formulário de identificação de fatores de risco cardiovascular e do questionário *The World Health Organization Quality of Life, bref* (WHOQOL-BREF*)*. Para análise dos dados empregou-se estatística descritiva. **Resultados:** evidenciou-se que 115 (87,8%) estudantes apresentavam fatores de risco cardiovascular. Quanto à qualidade de vida, a média dos escores foi de 70,1 (±17,0) para as relações sociais e 57,8 (±13,8) para o meio ambiente. **Conclusão:** constatou-se alta prevalência de fatores de risco cardiovascular, prevalecendo o sedentarismo e obesidade. Quanto à qualidade de vida, a pior percepção relacionou-se ao meio ambiente, já as relações sociais evidenciaram resultados positivos.
Descritores: Sistema Cardiovascular; Qualidade de Vida; Enfermagem; Estudantes de Enfermagem; Saúde do Estudante

Resumen: **Objetivo:** identificar los factores de riesgo cardiovascular y la percepción de la calidad de vida en estudiantes de enfermería de una universidad federal de Rio Grande do Sul, Brasil. **Método:** estudio descriptivo transversal, efectuado con 131 estudiantes de enfermería, en 2018. Los datos se recolectaron mediante un instrumento de caracterización demográfica y socioeconómica, un formulario para identificar factores de riesgo cardiovascular y el cuestionario *World Health Organization Quality of Life*, Bref. (WHOQOL-BREF). Para analizar los datos, se utilizó estadística descriptiva. **Resultados:** se evidenció que 115 (87,8%) estudiantes tenían factores de riesgo cardiovascular. En cuanto a la calidad de vida, el promedio de puntuación fue de 70,1 (±17,0) para las relaciones sociales y 57,8 (±13,8) para el medio ambiente. **Conclusión:** se observó una alta prevalencia de factores de riesgo cardiovascular, predominando el sedentarismo y la obesidad. En cuanto a la calidad de vida, la peor percepción estuvo relacionada con el medio ambiente, mientras que las relaciones sociales señalaron resultados positivos.
Descriptores: Sistema Cardiovascular; Calidad de Vida; Enfermería; Estudiantes de Enfermería; Salud del Estudiante

Introduction

Cardiovascular diseases (CVD) cause 31% of the registered deaths worldwide, totaling 17.7 million in 2015.[1] They are part of the group of Chronic Non-communicable Diseases (CNCD), including Systemic Arterial Hypertension (SAH), Diabetes Mellitus (DM) and neoplasms. In this sense, it is known that most deaths from CNCD are caused by a set of risk factors, highlighting smoking, inadequate diet, physical inactivity and alcohol consumption.[1]

CNCD are one of the greatest public health problems and cause of deaths in Brazil, generating disabilities and limitations that decrease Quality of Life (QOL).[2] The World Health Organization (WHO) defines QOL as the "perception of the individual of his position in life in the context of the culture and value systems in which he lives and in relation to his goals, expectations, standards and concerns".[3:1]

Thus, the early identification and control of Cardiovascular Risk Factors (CVRF) are essential practices for the management of CVD, which have an impact on health promotion and QOL, especially among university students. In this portion of the population, low QOL may happen due to certain demographic and socioeconomic characteristics, such as the distance from the hometown to the city where they study, also, associated with risk behaviors for CVD, such as sedentariness and excessive alcohol and sodium consumption.[4]

In order to underpin the present study, we held a search in the Regional Portal of the Virtual Health Library (VHL), in March 2020, with a view to identifying studies that addressed QOL and CVRF among nursing students. As a result, two surveys were identified and both indicated the need for changes in habits and care to improve QOL; however, they did not perform its measurement.[5-6] Thus, the present study is justified due to the increase in CVD in the young population and its impact on QOL, as well as the scarcity of studies addressing QOL and CVRF among Brazilian nursing students.

The studied theme is located in the axis of five lines of research covered by the agenda of research priorities in Brazil, which addresses CNCD.[7] As for the Sustainable Development Goals, it falls under Goal 3: ensuring a healthy life and promoting the well-being for all and at all ages.[8]

Thus, the research question is: what are the cardiovascular risk factors and what is the perception of quality of life of nursing students from a federal university in the countryside of Rio Grande do Sul (RS)? Our objective is to identify cardiovascular risk factors and the perception of quality of life among nursing students from a federal university in RS, Brazil.

Method

Descriptive cross-sectional study, which was conducted with nursing students from a public university located in the countryside of RS. The surveyed course started in 1976, has 4,190 hours, full-time and, after a recent curricular reform, went from 08 to 10 periods.[9]

We adopted as an inclusion criteria to be regularly enrolled in the course; and, as exclusion criteria, to be under 18 years old, to be pregnant, on health or maternity leave. During the collection period, 182 students were regularly enrolled. Subsequently, we performed the sample calculation:[10]

$$n = \frac{N.\delta^2.Z_{\frac{\alpha}{2}}^2}{(N-1)E^2 + \delta^2.Z_{\frac{\alpha}{2}}^2}$$

n=sample size;

Zα/2=critical value for the desired degree of confidence;

δ=population standard deviation of the variable;

E=standard error;

N=population size (finite).

We adopted a 95% confidence interval, a 50% proportion and a 5% margin of error, resulting in a minimum sample of 124 participants. Data were collected between March and May 2018, through: Demographic and socioeconomic characterization roadmap; CVRF identification form; and the World Health Organization Quality of Life questionnaire, Bref (WHOQOL-BREF) – Portuguese version.[11]

The demographic and socioeconomic characterization roadmap was developed by the researchers to identify the following variables: date of birth, gender, ethnicity, religion, marital status, having children or not, number of children, work/occupation, semester of the course, having a scholarship, family income in minimum wages (equivalent to R$ 937.00 at the time), distance from home to the university (km), travel time to the university (transportation to and from home), daily study time (hours/day), frequency of study at night (times per week).

The CVRF identification form was developed by the researchers, based on the Framingham Global Risk Score.[12] The variables listed in the present study were: weight and

height (used to calculate the Body Mass Index – BMI), abdominal circumference, waist and hip circumference (waist-to-hip ratio), arterial pressure, use of contraceptive methods (hormonal contraceptives, intrauterine device), smoking, previous treatment and/or undergoing treatment for depression at the time of collection, stress, practice of physical activity, indicators of low/intermediate cardiovascular risk (age over 65 years, male, smoking, hypertension or pre-eclampsia, obesity or central obesity, sedentariness, history of premature cardiovascular event in first-degree relatives, history of kidney disease, manifestations of atherosclerosis, diagnosis of dyslipidemia and diagnosis of polycystic ovary) and indicators of high cardiovascular risk (stroke, acute myocardial infarction, target organ damage, transient ischemic attack, left ventricular hypertrophy, nephropathy, retinopathy, ischemic congestive heart failure, abdominal aortic aneurysm, symptomatic carotid stenosis, DM, peripheral vascular disease, angina pectoris and chronic kidney disease).

CVRF can be low/intermediate or high. Students who presented only a low/intermediate risk factor were considered to have low cardiovascular risk. Those who presented at least one high cardiovascular risk factor were considered to be at high risk for developing cardiovascular diseases in 10 years; students who presented more than one low/intermediate risk factor should undergo complementary exams to calculate the probability of developing cardiovascular diseases in 10 years, and they were instructed to do.[12] We should underline that, based on the listed variables, it is possible to determine the amount of CVRF present in the surveyed population, but it is not possible to stratify cardiovascular risk, due to the lack of funding for carrying out complementary exams.

The WHOQOL-BREF is an instrument provided by the WHO for assessing QOL, organized using a five-point Likert scale, varying in intensity (nothing-extremely), capacity (nothing-completely), frequency (never-always) and assessment (very dissatisfied-very satisfied and very bad-very good), translated and validated for the Brazilian reality, with good

applicability in the healthy population. It has 26 questions, 24 of which correspond to the facets of the WHOQOL-100 and two related to QOL in general. The WHOQOL-BREF domains and the respective questions are: physical (3, 4, 10, 15, 16, 17 and 18), psychological (5, 6, 7, 11, 19 and 26), social relationships (20, 21 and 22), environment (8, 9, 12, 13, 14, 23, 24 and 25) and general QOL (1 and 2). Questions 3, 4 and 26 are reverse, that is, they are presented in a negative form.[11]

As for the process of obtaining the data, the instruments were self-applied, except for the anthropometric measurements, checked by the collectors, following the standardized recommendations, always with the same equipment, duly calibrated, in order to guarantee the reliability of the results.[12-13] We should underline that the collectors have undergone previous training. The pilot test took place with three students, who were excluded from the research.

The invitation to participate in the research was made through previous scheduling with the professors, taking into account that the entire collection process happened during class hours. Thus, after explaining the project, reading the Free and Informed Consent Form (FICF) and solving doubts, students were invited to participate in the study. The responsible researcher signed the Confidentiality Form and the students who agreed to participate signed the aforementioned FICF in two copies, following the ethical precepts for research with human beings. Then, data collection was performed. Furthermore, those who were not present at the opportunity were invited to participate at another time, previously scheduled.

The data were processed through double independent typing in the Microsoft Excel® software. Subsequently, the information was checked to verify and correct possible typing inconsistencies. The data were analyzed using descriptive statistics techniques in the Statistical Package for the Social Sciences (SPSS)® software, version 18.0, respecting the syntax for calculating the results of the WHOQOL-BREF,[11] which had its internal consistency analyzed with Cronbach's Alpha, obtaining α=0.8. The research was conducted in accordance with

current ethical standards. We should underline that this was approved by a Research Ethics Committee, under Opinion nº 2.451.568, on 12/20/2017.

Results

The research was attended by 131 (75.3%) nursing students enrolled in the course, 14 (10.7%) of the first semester, 22 (16.8%) of the second, 21 (16.0%) of the third, 19 (14.5%) of the fourth, 14 (10.7%) of the fifth, 16 (12.2%) of the sixth, 12 (9.2%) of the seventh and 13 (9.9%) of the eighth. We should highlight that, during the data collection, there were no 9th and 10th semester classes, which is why it is justified not to include them in the sample of the present study. The average age was 22.3 years (±4.5), with a minimum of 18 and a maximum of 50 years. In Table 1, demographic and socioeconomic variables will be addressed.

Table 1 – Description of the demographic and socioeconomic variables of nursing students. Rio Grande do Sul, 2018.

Variable	N	N	%
Gender	131		
Female		114	87.0
Male		17	13.0
Ethnicity	131		
White		88	67.2
Brown		23	17.6
Black		16	12.2
Indigenous		4	3.0
Religion	127		
Catholic		54	42.5
Catholic and spiritist		3	2.4
Catholic and umbanda		1	0.8
Spiritist		19	15.0
Umbanda		4	3.1
Evangelical		24	18.9
Atheist		9	7.1
Other*		12	9.4
Jewish		1	0.8
Marital status	131		

Solteiro		110	84.0
Stable union for more than 6 months		9	6.9
Married		7	5.3
Separated/divorced		2	1.5
Other		3	2.3
Motherhood/Fatherhood	131		
Yes		13	9,9
No		118	90,1
Number of children	13		
One child		7	53.8
Two children		4	30.8
Three children		2	15.4
Distance from home to the university (km)	128		
0-5		52	40.6
5.1-10		7	5.5
10.1-15		52	40.6
15.1-20		17	13.3
Work	130		
Yes		9	6.9
No		121	93.1
Occupation	9		
Nursing technician		4	44.4
Others		5	55.6
Scholarship	131		
Yes		61	46.6
No		70	53.4

* Mormon, Lutheran, Muslim and agnostic.

Regarding family income in minimum wages, we identified an average of 4.7 minimum wages (±3.4). When dealing with the travel time to the educational institution in minutes, the participants spent, on average, 64.5 (±49.2). The daily study time averaged 8.1 hours/day (±3.8). As for the frequency of study at night, we obtained an average of 3.5 (± 1.6) times per week.

On average, those surveyed had 68.2 kg (±17) and a body mass index (BMI) of 25 (±5.5). Table 2 presents the distribution of BMI, according to the WHO classification.[13]

Table 2 – Distribution of the BMI of nursing students. Rio Grande do Sul, 2018.

BMI	Classification	Disease risk	N	%
<18.5	Slim (low weight)	Normal or high	12	9.1
18.5-24.9	Normal (eutrophic)	Normal	65	49.6
25-29.9	Overweight (pre-obese)	Slightly high	28	21.4
30-34.9	Grade I obesity	High	17	13.0
35-39.9	Grade II obesity	Very high	8	6.1
≥40.0	Grade III obesity	Very much high	1	0.8

Regarding waist circumference measurements, 92 (70.2%) were within the indicated values and 39 (29.8%) had central obesity (86.6 cm and ±13.6). Furthermore, as for the waist-to-hip ratio (WHR), 102 (77.9%) students presented normal values and 29 (22.1%) showed values that represent CVRF.

As for the measurement of Arterial Pressure or Blood Pressure (BP), 69 (52.7%) had BP≤120/80 mmHg and 62 (47.3%) had BP>120/80 mmHg. The average Systolic Arterial Pressure was 119 mmHg (±14.8) and the Diastolic Arterial Pressure was 76 mmHg (±10.5).

Concerning the use of contraceptive methods, of the 114 surveyed women, 80 (70.2%) reported using it and, of these, 78 (97.5%) used hormonal contraceptives and 02 (2.5%) used an Intrauterine Device (IUD) made of copper. Among the hormonal contraceptive methods used, the most common was oral with pause, used by 53 (66.3%), of whom 23 (28.8%) used continuous oral, 01 (1.3%) who used monthly injectable and 01 (1.3%) used hormonal IUD. As for the time of use of the contraceptive method in months, there was an average of 52.3 months (±33.4). Furthermore, we found that 29 of the 78 students who used hormonal contraceptives had some CVRF, 17 (58.6%) with obesity, 05 (17.2%) with dyslipidemia, 03 (10.3%) with obesity and dyslipidemia, 01 (3.5%) smoker, 01 (3.5%) smoker and obese, 01 (3.5%) with obesity and DM and 01 (3.5%) had only DM.

As for depression, 35 (26.7%) reported having undergone treatment for the disease at some point in their lives. Furthermore, 21 (16%) were undergoing treatment for depression at the time of collection, on average for 19.3 months (±17.4). In the question related to stress, 90

(68.7%) referred to themselves as stressed. As for the practice of physical activity, 69 (52.7%) reported not practicing, 30 (22.9%) said they practiced less than 30 minutes on five days per week and 32 (24.4%) reported practicing more than 30 minutes five days per week.

In addition, we identified the presence of CVRF, classified as low/intermediate (with 11 factors) and high risk (with 14 factors), which were separately assessed. Table 3 presents the distribution of low/ intermediate and high risk indicators among the participants.

Table 3 – Distribution of low/intermediate and high risk indicators among nursing students. Rio Grande do Sul, 2018.

Risk indicators	N	%
Low/intermediate		
Age> 65 years	0	0.0
Male gender	17	13.0
Smoking	5	3.8
Hypertension (> 140/90 mmHg) or history of preeclampsia	5	3.8
Obesity (BMI>30 kg/m^2) or central obesity (abdominal waist measured at navel height:> 88 cm in women;> 102 cm in men)	41	31.3
Sedentariness	74	56.5
History of premature cardiovascular event in first-degree relatives: father, mother, siblings (men <55 years and women <65 years)	25	19.1
Family history of kidney disease (for risk of kidney failure)	16	12.2
Manifestations of atherosclerosis: carotid artery murmurs, decrease or absence of peripheral pulses	8	6.1
Previous diagnosis of dyslipidemia	8	6.1
Previous diagnosis of polycystic ovary syndrome	19	14.5
High risk indicators		
Peripheral injury – target organ damage (TOD)	1	0.8
Diabetes mellitus	3	2.3
Peripheral vascular disease	1	0.8
Angina pectoris	2	1.5
Chronic kidney disease	1	0.8

As for the number of identified low/intermediate risk factors, 18 (13.7%) students did not present; 44 (33.6%) presented one factor; 45 (34.4%) two factors; 17 (13%) three factors; 03 (2.3%)

four factors; and 03 (2.3%) five factors. We should highlight one participant (0.8%) who presented six factors. In general, each student presented an average of 1.93 (±1.0) CVRF.

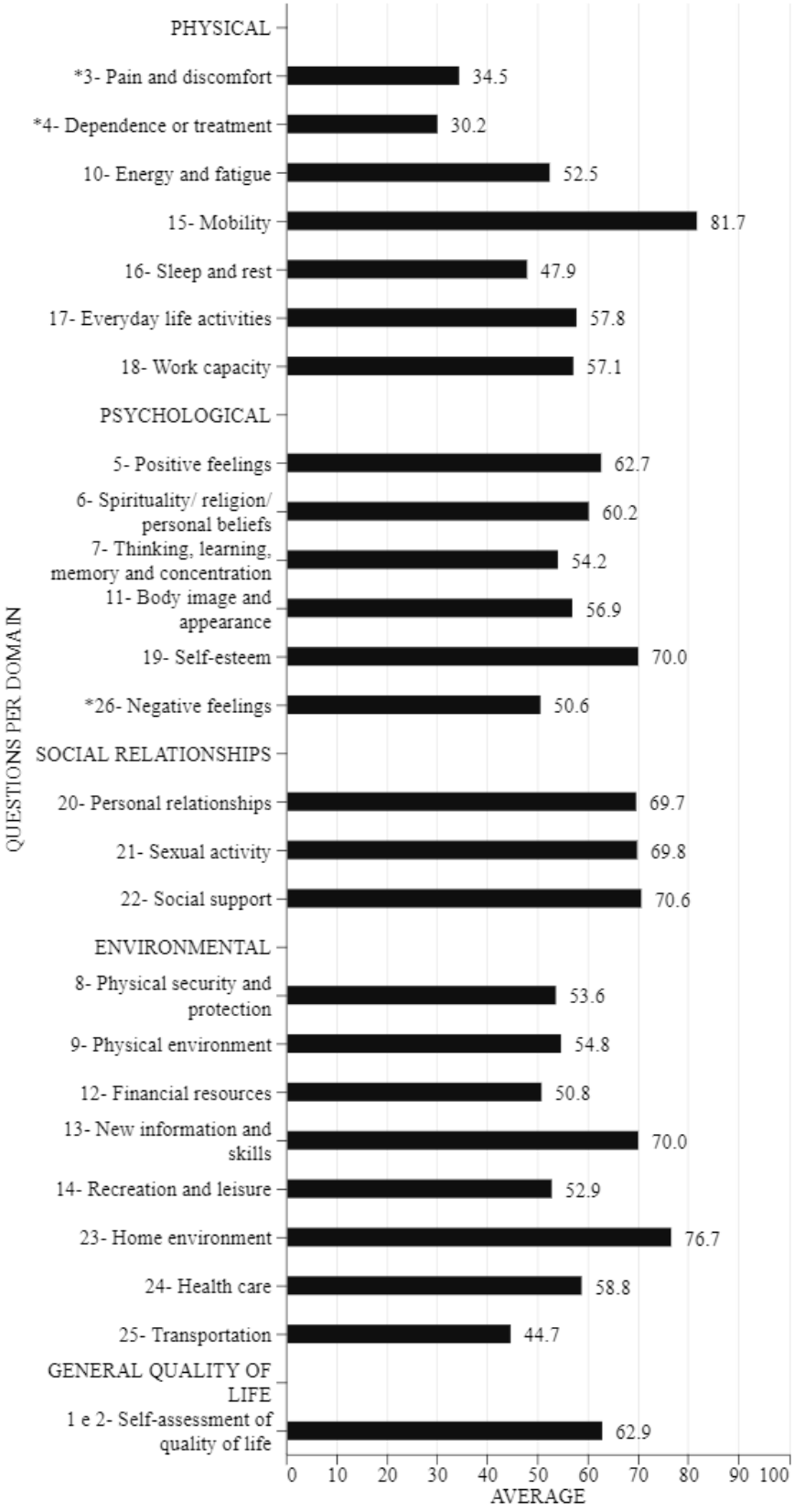
With respect to the assessment of QOL, the average score of the domains was: physical domain 61.8 (±14.2), psychological 58.9 (±14.7), social relationships 70.1 (±17.0), environment 57.8 (±13.8) and self-assessment of QOL 62.9 (±16.8). Table 4 presents the average of the QOL scores, according to the domain and semester of the course.

Table 4 – Average and variability of the quality of life scores, according to the domain and semester of the course. Rio Grande do Sul, 2018.

Semester of the course	N	Domain Quality of life				Self-assessment of QOL
		Physical	Psychological	Social relationships	Environment	
First	14	62.2 (±10.6)	**64.0 (±10.6)**	72.6 (±10.1)	56.8 (±9.2)	62.5 (±12.7)
Second	22	62.6 (±14.3)	61.7 (±12.7)	70.8 (±12.3)	**65.2 (±9.4)**	**64.5 (±15.2)**
Third	21	64.8 (±16.1)	63.3 (±19.6)	73.6 (±22.8)	60.3 (±14.4)	63.6 (±19.9)
Fourth	19	**56.1 (±15.6)**	53.1 (±14.3)	65.8 (±17.1)	54.8 (±14.8)	56.3 (±13.8)
Fifth	14	58.4 (±14.6)	**51.7 (±14.1)**	**63.7 (±17.5)**	**50.9 (±18.5)**	**55.3 (±16.6)**
Sixth	16	**65.6 (±12.9)**	60.4 (±10.1)	72.9 (±18.1)	56.0 (±12.4)	61.7 (±16.8)
Seventh	12	64.9 (±13.9)	61.8 (±11.4)	**74.7 (±13.4)**	55.2 (±11.9)	62.5 (±18.9)
Eighth	13	57.7 (±12.9)	54.2 (±17.9)	66.0 (±20.3)	57.8 (±15.1)	58.3 (±19.8)

The average scores of the 26 questions (facets) of the WHOQOL-BREF are presented in Figure 1, separated by domain. The three negative questions in the questionnaire are highlighted, which are preceded with an asterisk sign, as can be noted.

Figure 1 – Average of the scores of the WHOQOL-BREF questions (facets). Rio Grande do Sul, 2018.



*Inverted questions (five-point Likert scale)

The question with the worst perception was related to the means of transportation, with an average of 44.7 (±27.8). Conversely, the best average, 81.7 (±18.3), is related to the ability to move around.

Discussion

The demographic profile of the surveyed students corroborates with the 2013 Nursing Profile Survey in Brazil, which identified a predominance of women (86.2%), white (57.9%), followed by browns (31.3%), blacks (6.6%), yellow (2.5%) and indigenous (0.3%).[14] This information raises reflection, because, in the historical origins of the profession, nursing was held only by women, associating care with the female gender, which can reflect on the current representation of nursing, despite the growing number of men in the profession. This result also requires attention in terms of ethnicity, as historically access to higher education was for white people, mostly men, and with higher purchasing power. This reality has been slowly reversed with affirmative actions, as well as access and permanence policies in universities.[15]

As for work and professional performance, the results found are similar to a study in which 97.6% of the 164 surveyed individuals did not have employment links, especially due to the fact that the course works full-time.[16] Regarding the presence of a scholarship, the results are similar to the Student Profile Survey in Brazil, which found that 75.6% of the students from a public university did not contribute to home maintenance. Of those who did, 46.8% contributed by working and 53.2% through scholarships.[17]

With regard to family income, they received, on average, R$ 4,432.01/month. During the collection period, the minimum amount necessary for the Brazilians to meet the expected basic needs was R$ 3,701.70 per month.[18] We can conclude that, on average, these participants

received adequate wages to meet family needs; however, the particularities of each context and family should be considered.

The time spent with commuting showed a similar average with research that identified that the nursing students from a public university in São Paulo took more than 60 minutes on the way between their houses and the university.[19] Considering the 2010 Census, we noticed that the respondents spent 17.54 minutes more on a daily commute than the average Brazilian population living in countryside cities, which takes an average of 46.96 minutes. That is, the time is comparable to the averages of the capitals without a Metropolitan Region (67.01 minutes).[20] We should underline that the mobility in the city in question is deficient and affects the QOL of the population. Thus, the act of investing in urban mobility provides benefits to residents, such as improving well-being, avoiding problems related to access to health, education and security.[21]

Regarding the study time at night, the results of this research show that the surveyed students experienced an extensive workload of studies and, sometimes, this leads to abandoning physical activities and healthy diet, influencing and increasing the probability of developing CVRF.[6] A qualitative study conducted in Bahia brought the workload of studies, internships, extracurricular activities, demands on academic performance and a consequent inadequate diet as non-promoters of QOL.[22]

We found that the average BMI was 25 kg/m^2, a value that belongs to the classification of overweight or pre-obesity. It should also be noted that almost ¼ of the participants were identified with central obesity, which reflects visceral fat and is one of the factors for metabolic syndrome, where the reference values are ≤ 88 cm in women and ≤102 cm in men.[23] Another measure checked in the participants was WHR, which reflects the total body fat and has as reference values: ≤0.9 for men and ≤0.8 for women; 22.1% of the respondents presented values that represent cardiovascular risk.[13] With the panorama and the context in which the students

are inserted, it can be reflected that the study load, with the consequent lack of hours for leisure and physical exercises, may be contributing to the general health status and QOL, directly reflecting in CVRF.

With regard to BP, 62 (47.3%) surveyed individuals presented values above 120/80 mmHg. For the Brazilian Society of Cardiology, the classification of BP according to casual measurement or at the medical office, from 18 years of age, is considered normal at values equal to or less than 120/80 mmHg; from 121-139/81-89 mmHg, it is classified as pre-hypertension; and above this, it is considered hypertension.[12] We should underline that the values of an isolated measurement do not diagnose SAH. Participants with altered BP values were instructed to seek the reference health unit. A study that assessed the cardiovascular risk of nursing students found an average systolic BP of 106.8 mmHg and diastolic BP of 71.6 mmHg,[6] similar to the results found in the present paper.

Research conducted with 21,074 Brazilian women, aged between 18 and 49 years, showed that 51.5% used some hormonal contraceptive, where the most used was oral contraceptive (33.8%). The present study identified that nursing students had been using more hormonal contraceptives than the average of the Brazilian population, a reality that can be explained due to the possibilities studied during the course. On the other hand, we identified a considerable number of women who had CVRF (smoking, obesity, DM and dyslipidemia) and used hormonal contraceptives, a risky form of contraception. Research shows that some CVRF, such as SAH, smoking, dyslipidemia, obesity and DM, when present, restrict the indications to the use of hormonal contraceptives, due to potential complications, such as thrombosis and stroke.[24]

Among those surveyed, 90 (68.7%) considered themselves stressed. Research brought stress as harmful to QOL, where nursing students considered the overload of activities, the daily distance traveled between the residence and the university and the lack of leisure time as stress generators.[19] Furthermore, a study identified the presence of average stress in 74.5% of the

nursing students from four higher education institutions, and high stress among 15.1% of them.[25] This demonstrates a worrying reality and causes reflection on physical and mental health during the period of the undergraduate course, also noticed with regard to depression among university students. The depressive process can lead to greater stress, especially due to its negative impact on daily life, which can result in different dysfunctions that impact on life as a whole, including in the academic area. The WHO brings a relationship between depression and physical health, taking CVD as an example, which can lead to depression, being also possible the opposite.[26]

In addition, most students reported not practicing physical activity (52.7%), and the value found is similar to the Brazilian national average, since a survey identified that 62.1% of the Brazilians are sedentary.[27] It can be inferred that the high sedentary lifestyle among those surveyed is related to the competitiveness of the labor market, workload of studies and internships, as well as possible personal barriers, such as lack of motivation, money and companions to practice physical activities, which is attributed as a meaning of QOL in a study.[19]

An important point to be noted is that the two CVRF were most frequently changeable (sedentariness, obesity or central obesity). The assessment of CVRF should not be seen only as a mere calculation, but rather as a means of promoting reflections among students, teachers and managers at the university where the research was developed, taking into account the existence of risky behaviors in this setting. We should underline that the prevention of cardiovascular risks since youth is essential for the aging process to happen with health and QOL.[6]

Research conducted with nursing students from Bahia inferred that 64.3% of the participants did not practice physical activities and 35.7% had little time for leisure.[22] Another research found that 84 (67.9%) nursing students were insufficiently active and 17.8% were sedentary. Furthermore, 36.9% had their waist circumference above the appropriate values, that

is, they presented central obesity. It also brings that the practice of physical activity and the diet are behaviors of great influence in the development of CNCD.[6]

The results found with the WHOQOL-BREF instrument pointed to a worse perception of QOL in the environmental domain, followed by the psychological domain. Conversely, the domain with the best rating was that of social relationships, followed by the physical one. With regard to the self-assessment of QOL, most participants rated their QOL as good or very good, and they were satisfied or very satisfied with their health conditions.

These results are similar to the findings of a study conducted with 116 nursing students from Amazonas, which obtained a score of 71.2 for the domain of social relationships, 65.7 for the psychological domain, 58.6 for the environmental domain and 57.4 for the physical domain. It is noted that, in addition to similar scores, the best assessment of QOL was obtained in the same domain, that of social relationships, which refers to issues of social support and sexual life. This result is very important for teachers, as it may indicate the need for actions with students, since their social relationships are often changed when they come from other locations to attend undergraduate courses.[28]

A study showed that, in the perception of nursing students from a public university, the friendship among colleagues, the sports practices and the possibility of obtaining scholarships for scientific initiation or work favor QOL. Among the factors that decrease QOL, we can mention the distance between the place of residence and the university, the full-time course, the overload of activities, the financial expenses and the lack of leisure time.[19] As for fhe environmental domain, which presented lower scores, it is related to issues of security, climate, noise, pollution, financial issues, leisure, access to health services, transportation and housing. In RS, in 2017, 3,316 homicides, 1,460 rapes and 1,893 deaths in traffic accidents were recorded.[29]

When assessing students according to the semester of the course, we noticed that the fifth semester had the worst rating of QOL in the psychological, environmental, social

relationships and self-assessment domains. One of the hypotheses for the low QOL in the fifth semester may be the beginning of practical classes in the hospital environment, rated in studies as a circumstance that does not promote QOL.[19,28] Furthermore, according to the current curriculum of the nursing course of the institution in question, the fifth semester is the one with the greatest workload, 480 hours, followed by the fourth semester, with 450 hours,[9] with the extensive workload already discussed previously as an aspect that compromises the perception about QOL.[22]

Finally, regarding the best QOL scores, the second semester obtained the best perception in the domains of environment and self-assessment of QOL. This result can be considered in the sense that the students of the second semester had undergone a previous semester of adaptation to the class and the institution, and were not yet inserted in the practical classes in the health services, which may entail a lower level of demand and less stress.[22] The study was conducted in a specific reality, focusing on the identification of CVRF and the perception of QOL and, therefore, there is a limitation in the generalization of the findings. Furthermore, other approaches that make associations and address human subjectivity are essential, in order to fill the existing gaps and promote greater attention to the health issues of nursing students.

Conclusion

The predominant profile of nursing students in the investigated institution is consisted of women, white, single, childless, Catholic and without professional occupation. There was a high prevalence of CVRF such as sedentariness and obesity among the participants, highlighting a serious and challenging reality. With respect to QOL, we identified that the greatest problem is related to the environmental and psychological issues; and, on the other hand, there is a better perception of QOL in social relationships and physical issues.

In light of the results, there is a need for an intersectoral articulation to carry out actions focused on promoting QOL and minimizing the presence of CVRF among students, as the most frequent ones are changeable. Investigating the presence of CVRF and QOL among nursing students allows us to broaden our gaze towards the different spheres of management involved in supporting this part of society. This fact represents an advance in issues related to the ways of thinking about this population, which needs a type of support that transcends the focus on the training process and starts with a set of reflections and actions focused on the development of the individual and future nursing professional.

References

1. Organização Pan-Americana de Saúde (OPAS-BR). Doenças cardiovasculares [Internet]. Brasília (DF): OPAS-BR; 2017 [acesso em 2019 fev 12]. Disponível em: https://www.paho.org/bra/index.php?option=com_content&view=article&id=5253:doencas-cardiovasculares&Itemid=1096

2. Malta DC, Andrade SSCA, Oliveira TP, Moura L, Prado RR, Souza MFM. Probabilidade de morte prematura por doenças crônicas não transmissíveis, Brasil e regiões, projeções para 2025. Rev Bras Epidemiol. 2019;22:e190030. doi: 10.1590/1980-549720190030

3. World Health Organization (WHO). WHOQOL: measuring quality of life [Internet]. Geneva: WHO; 1997 [cited 2019 Feb 12]. Available from: https://apps.who.int/iris/bitstream/handle/10665/63482/WHO_MSA_MNH_PSF_97.4.pdf?sequence=1&isAllowed=y

4. Hickel F, Fabro BR, Bertoldi EG. Fatores de risco cardiovascular e qualidade de vida de acadêmicos de Medicina da Universidade Federal de Pelotas. Rev AMRIGS. 2015 [acesso em 2018 out 19];59(3):186-91. Disponível em: https://livrozilla.com/doc/744346/05_1498_revista-amrigs.indd

5. Cruz-Sánchez E, Orosio-Méndez M, Cruz-Ramírez T, Bernardino-Garcia A, Vásquez-Domínguez L, Galindo-Palma N, et al. Factores de riesgo cardiovascular en estudiantes de enfermería de una universidad pública. Enferm Univ. 2016;13(4):226-32. doi: 10.1016/j.reu.2016.09.004

6. Santos JS, Patrício ACFA, Alves KLA, Albuquerque KF, Pereira IL, Félix IVB. Avaliação para riscos cardiovasculares em estudantes de enfermagem. REME Rev Min Enferm. 2015;19(4):848-53. doi: 10.5935/1415-2762.20150065

7. Ministério da Saúde (BR), Secretaria de Ciência, Tecnologia e Insumos Estratégicos, Departamento de Ciência e Tecnologia. Agenda de prioridades de pesquisa do Ministério da Saúde - APPMS [Internet]. Brasília (DF): Ministério da Saúde; 2018 [acesso em 2020 mar 06]. Disponível em: https://bvsms.saude.gov.br/bvs/publicacoes/agenda_prioridades_pesquisa_ms.pdf

8. United Nations (UN). Transforming our world: the 2030 agenda for sustainable development [Internet]; 2015 [cited 2019 Sept 18]. Available from: https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

9. Universidade Federal de Santa Maria (UFSM). Portal do ementário. Ementa do curso de Enfermagem [Internet]. 2017 [acesso em 2019 mar 14]. Disponível em: https://portal.ufsm.br/ementario/curso.html?idCurso=762

10. Callegari-Jacques SM. Bioestatística: princípios e aplicações. Porto Alegre: Artmed; 2018. 255 p.

11. Universidade Federal do Rio Grande do Sul (UFRGS), Grupo Whoqol. Projeto Whoqol-Bref [Internet]. 2016 [acesso em 2020 jul 15]. Disponível em: https://www.ufrgs.br/qualidep/qualidade-de-vida/projeto-whoqol-bref

12. Précoma DB, Oliveira GMM, Simão AF, Dutra OP, Coelho OR, Izar MCO, et al. Atualização da diretriz de prevenção cardiovascular da Sociedade Brasileira de Cardiologia - 2019. Arq Bras Cardiol. 2019;113(4):787-891. doi: 10.5935/abc.20190204

13. Associação Brasileira para o Estudo da Obesidade e da Síndrome Metabólica (ABESO). Diretrizes brasileiras de obesidade [Internet]. 2016 [acesso em 2019 jun 12]. Disponível em: https://abeso.org.br/wp-content/uploads/2019/12/Diretrizes-Download-Diretrizes-Brasileiras-de-Obesidade-2016.pdf

14. Conselho Federal de Enfermagem (COFEN). Pesquisa Perfil da Enfermagem no Brasil [Internet]. 2016 [acesso em 2018 jun 12]. Disponível em: http://www.cofen.gov.br/perfilenfermagem/index.html

15. Silva GHG. Um panorama das ações afirmativas em Universidades Federais do Sudeste brasileiro. Cad Pesqui. 2019;49(173):184-206. doi: 10.1590/198053145665

16. Garcia AKA, Moraes A, Guariente MHDM. Perfil de estudantes ingressantes de um curso de Enfermagem do Sul do Brasil: caracterização dos hábitos de leitura e estudo. Semina Cienc Biol Saude. 2016;37(2):47-54. doi: 10.5433/1679-0367.2016v37n2p47

17. Universidade do Estado do Rio de Janeiro (UERJ), Instituto de Medicina Social (IMS), Rede Observatório de Recursos Humanos em Saúde. Alunos de graduação em Enfermagem - perfil, expectativas e perspectivas profissionais: relatório [Internet]. 2008 [acesso em 2018 jun 12]. Disponível em: http://www.obsnetims.org.br/uploaded/30_4_2013__0_Relatorio_Pesquisa_Alunos_Graduacao.pdf

18. Departamento Intersindical de Estatística e Estudos Socioeconômicos (DIEESE). Pesquisa Nacional da Cesta Básica de Alimentos. São Paulo; 2018 [acesso em 2019 jun 12]. Disponível em:

https://www.dieese.org.br/analisecestabasica/salarioMinimo.html#2017

19. Oliveira BM, Mininel VA, Felli VEA. Qualidade de vida de graduandos de enfermagem. Rev Bras Enferm. 2011;64(1):130-5. doi: 10.1590/S0034-71672011000100019

20. Instituto Brasileiro de Geografia e Estatística (IBGE). Pesquisa Nacional por Amostra de Domicílios: um panorama da saúde no Brasil. 2010 [acesso em 2017 out 22]. Disponível em: http://bvsms.saude.gov.br/bvs/publicacoes/pnad_panorama_saude_brasil.pdf

21. Lopes AFA, Guerra MEA. O programa cidade sustentável, seus indicadores e metas: instrumentos metodológicos para a avaliação da sustentabilidade no município de Prata/MG. In: Pacheco JTR, Kawanishi JY, Nascimento R. Meio ambiente e desenvolvimento sustentável. Ponta Grossa (PR): Atena; 2019. Cap. 12; p. 139-56.

22. Freitas AMC, Bárbara JFRS, Vale PRLF, Carvalho SS, Carvalho LF, Nery GS. Percepções de estudantes de enfermagem referente à qualidade de vida na trajetória acadêmica. Rev Enferm UFSM. 2017;7(2):152-66. doi: 10.5902/2179769225391

23. Sociedade Brasileira de Endocrinologia e Metabologia. Síndrome Metabólica [Internet]. 2017 [acesso em 2018 jun 12]. Disponível em: https://www.endocrino.org.br/sindrome-metabolica/

24. Corrêa DAS, Felisbino-Mendes MS, Mendes MS, Malta DC, Velasquez-Melendez G. Fatores associados ao uso contraindicado de contraceptivos orais no Brasil. Rev Saúde Pública. 2017;51(1):1-10. doi: 10.1590/S1518-8787.2017051006113

25. Bublitz S, Guido LA, Lopes LFD, Freitas EO. Associação entre estresse e características sociodemográficas e acadêmicas de estudantes de enfermagem. Texto Contexto Enferm. 2016; 25(4):e2440015. doi: 10.1590/0104-07072016002440015

26. Organização Pan-Americana de Saúde (OPAS-BR). Folha Informativa- depressão [Internet]. 2018 [acesso em 2019 fev 15]. Disponível em: https://www.paho.org/bra/index.php?option=com_content&view=article&id=5635:folha-informativa-depressao&Itemid=1095

27. Instituto Brasileiro de Geografia e Estatística (IBGE). Pesquisa Nacional por Amostra de Domicílios: prática de esporte e atividade física - 2015 [Internet]. 2017 [acesso em 2019 jun 12]. Disponível em: https://biblioteca.ibge.gov.br/visualizacao/livros/liv100364.pdf

28. Gama ASM. Qualidade de vida de estudantes de enfermagem do Amazonas, Brasil. Rev Baiana Enferm. 2016;30(4):1-9. doi: 10.18471/rbe.v30i4.17011

29. Instituto de Pesquisa Econômica Aplicada (IPEA). Atlas da violência [Internet]. 2017 [acesso em 14 jul 2020]. Disponível em: https://www.ipea.gov.br/atlasviolencia/filtros-series

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