

Scientific evidence on cardiovascular risk factors in health students: integrative review

Evidências científicas sobre fatores de risco cardiovascular em estudantes da área da saúde: revisão integrativa
Evidencia científica sobre factores de riesgo cardiovascular en estudiantes de salud: revisión integrativa

RESUMO

Objetivo: identificar os fatores de risco cardiovascular presentes em estudantes da área da saúde como possibilidade de desenvolvimento de ações preventivas. Método: revisão integrativa da literatura realizada de janeiro a abril de 2023, com artigos publicados nas bases de dados MEDLINE, LILACS, IBECs e BDNF entre os anos 2013 e 2023. Resultados: foram encontrados 34 artigos, restando seis que apresentaram os seguintes fatores de risco: consumo de bebidas alcoólicas, tabagismo, alterações no peso, sedentarismo, aumento de colesterol, estresse, hipertensão arterial e diabetes mellitus tipo 2. Três (50%) artigos destacaram a presença de baixa renda e existência de histórico familiar para doenças cardiovasculares. Conclusão: Os fatores de risco estão presentes na vida da população de universitários da área da saúde, sendo necessário elaborar estratégias de educação em saúde voltadas ao público universitário.

DESCRITORES: Fatores de Risco Cardiovascular; Estudantes de Ciências da Saúde; Enfermagem.

ABSTRACT

Objective: to identify the cardiovascular risk factors present in health students as a possibility of developing preventive actions. Method: integrative literature review carried out from January to April 2023, with articles published in the MEDLINE, LILACS, IBECs and BDNF databases between the years 2013 and 2023. Results: 34 articles were found, leaving six that presented the following factors of risk: consumption of alcoholic beverages, smoking, changes in weight, sedentary lifestyle, increased cholesterol, stress, arterial hypertension and type 2 diabetes mellitus. Three (50%) articles highlighted the presence of low income and the existence of a family history of cardiovascular diseases. Conclusion: Risk factors are present in the life of the population of university students in the health area, and it is necessary to develop health education strategies aimed at the university public.

DESCRIPTORS: Cardiovascular Risk Factors; Students, Health Occupations; Nursing.

RESUMEN

Objetivo: identificar los factores de riesgo cardiovascular presentes en estudiantes de salud como posibilidad de desarrollar acciones preventivas. Método: revisión integrativa de la literatura realizada de enero a abril de 2023, con artículos publicados en las bases de datos MEDLINE, LILACS, IBECs y BDNF entre los años 2013 y 2023. Resultados: se encontraron 34 artículos, quedando seis que presentaban los siguientes factores de riesgo: consumo de bebidas alcohólicas, tabaquismo, cambios de peso, sedentarismo, colesterol elevado, estrés, hipertensión arterial y diabetes mellitus tipo 2. Tres (50%) artículos destacaron la presencia de baja renta y la existencia de antecedentes familiares de enfermedades cardiovasculares. Conclusión: Los factores de riesgo están presentes en la vida de la población de estudiantes universitarios del área de la salud, siendo necesario desarrollar estrategias de educación en salud dirigidas al público universitario.

DESCRIPTORES: Factores de Riesgo Cardiovascular; Estudiantes del Área de la Salud; Enfermería.

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Relato de Caso EN

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INTRODUCTION

Cardiovascular diseases (CVD) are one of the main causes of death worldwide, being responsible for around 18.6 million deaths globally. In Brazil, this scenario is no different, with 48% of national deaths occurring due to CVD, representing around 400,000 deaths annually.¹

There are several risk factors for the development of CVD, including alcoholism, systemic arterial hypertension, diabetes mellitus, cholesterol, stress, sedentary lifestyle, smoking, obesity and poor diet. In addition to these, hereditary and genetic factors also deserve great attention in terms of their influence on the origin of CVD.²⁻³

For a long period of time, these cardio-

vascular risks were considered important only in older age groups of the population. However, recent studies show that these same risks exist among young adults, as well as children and adolescents.²⁻³

When talking about the young population, it is important to reflect on the university environment, considered a place that promotes changes in lifestyle, as students will sometimes need to work

to cover the costs of their studies or even help with family income.

Degrees in the health area sometimes have working students, leading to overload between work and study, causing them to acquire unhealthy habits and contributing to an increase in cardiovascular risk factors.

In this scenario, it is important that as health professionals, we must be aware of the presence of cardiovascular risk factors in the academic environment, aiming to create strategies that promote awareness among this public about such conditions, as well as health promotion programs aimed at reducing unfavorable behaviors.

Therefore, this study aims to identify the cardiovascular risk factors present in students in the health field as a possibility for developing preventive actions.

METHOD

This study was carried out using an integrative literature review as a method,

which aims to group scientific evidence on a specific topic of interest to researchers, extracting and compiling information that allows for an overview of the subject covered.⁴

The integrative review is divided into six phases, the first being marked by the choice of the topic and definition of the guiding question, using the PICO strategy to determine a solid research question, which directly contributes to the identification of accurate data from the literature. Thus, the letter P refers to the population, I refers to the intervention, C refers to the comparison and O presents the outcome.⁴

In this context, the guiding question used for this integrative review was: What cardiovascular risk factors are present in university students in the health area, considering the implementation of preventive actions?

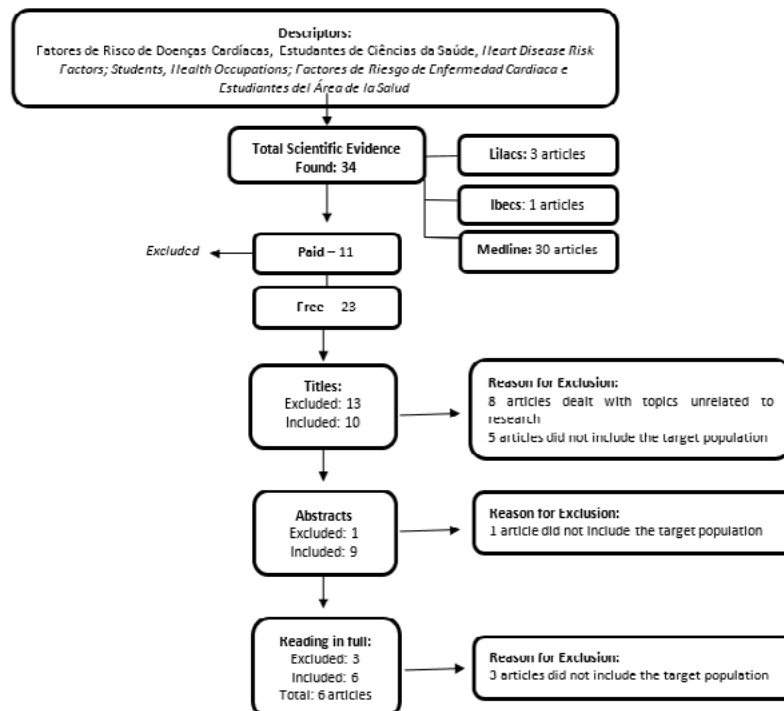
Since P refers to university students in the health field, I deals with cardiovascular risk factors and O includes carrying

out preventive actions. It should be noted that in this review, C, which deals with comparison, was not used as it is not relevant to the object of study.

The second phase involved establishing the inclusion and exclusion criteria, which used the following descriptors to collect scientific evidence: Fatores de Risco de Doenças Cardíacas, Estudantes de Ciências da Saúde; Heart Disease Risk Factors; Students, Health Occupations; Factores de Riesgo de Enfermedad Cardíaca e Estudiantes del Área de la Salud, previously selected in the Bireme Health Sciences Descriptors (Decs) and associated with each other using the Boolean indicator “AND”.

Thus, the inclusion criteria referred to complete articles, available in full, present in the databases Medical Literature Analysis and Retrieval System online (MEDLINE), Latin American and Caribbean Literature in Health Sciences (LILACS), Bibliographic Index Español en

Figure 1 - Steps for selecting the articles included in this review. São Paulo, SP, 2023



Source: Own preparation.

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 Scientific evidence on cardiovascular risk factors in health students: integrative review

Ciencias de la Salud (IBECS) and Brazilian Nursing Database (BDENF), in Portuguese, English and Spanish, published between 2013 and 2023, and that were relevant to answer the research question.

While the exclusion criteria referred to repeated articles, not available in full, paid, outside the years researched, which did not suit the subject or target population and in a language different from that previously established.

The searches took place between the months of January to April 2023 and for the selection of studies, which constitutes the third phase of this review, the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) was used, considering the repetition of studies, their free availability, analysis of titles, abstracts, and full reading.

After determining the articles that would make up this review, the fourth phase began, in which the studies were analyzed highlighting the year and journal of publication, language, database, study country, method and level of evidence, according to the Oxford Center Evidence-Based Medicine index.⁴

It is noteworthy that the selected studies were also categorized in line with the central theme developed, as well as the data were analyzed using simple statistics and represented in tables.

The fifth stage was related to the discussion of the results while the sixth and final stage dealt with the structuring of the integrative review, following the PRISMA templates.⁵

As it was an integrative review, it was not necessary to submit it to the Research Ethics Committee.

RESULTS

A total of 34 scientific pieces of evidence were recovered from the previously selected databases, which were initially evaluated using free title, abstract and full reading, resulting in six (100%) studies that were part of this review.

Of these articles, two (33.34%) were in English, two (33.34%) in Portuguese and two (33.34%) in Spanish. Regarding the databases, it was observed that three (50%) of the studies were indexed in Lilacs, two (33.34%) in Medline and one (16.66%) in Ibecs. The year of publication ranged from 2014 to 2022, with two (33.34%) pieces of evidence being published in 2022 and one (16.66%) in 2014, 2015, 2016 and 2021. The publication countries referred to Brazil with two (33.34%) studies, Mexico, Co-

Table 1. Details of the scientific evidence recovered in the databases

EVIDENCE	OBJECTIVE	RESULTS	RISK FACTORS	FAMILY HISTORY	LOW INCOME
E1 ⁶	To identify cardiovascular risk factors among nursing students at a public university in the interior of Amazonas, Brazil.	<ul style="list-style-type: none"> - Prevalence of students with low income; - More than 60% have a family history of hypertension - 40.4% family history of diabetes mellitus - 50% drink alcoholic beverages <ul style="list-style-type: none"> - 4.8% are smokers - 73.8% have a stress index - 42.8% sedentary lifestyle 	Consumption of alcoholic beverages, smoking, stress, sedentary lifestyle	Yes	Yes
E2 ⁷	To identify the presence of cardiovascular risk factors in nursing degree students at a public university in the state of Oaxaca, Mexico.	<ul style="list-style-type: none"> - 53.5% receive less than the minimum wage - 30% to 45.8% have family risk factors for cardiovascular disease - 52.1% consume alcohol; - 24.5% are smokers 	Consumption of alcoholic beverages and smoking	Yes	Yes
E3 ⁸	To describe the lifestyle habits of students entering the undergraduate nursing course, related to cardiovascular risk factors	<ul style="list-style-type: none"> -- Economy class C - 55% consume alcoholic beverages - 4.2% lipid alteration; - 20.5% are overweight - 7.7% with obesity 	Consumption of alcoholic beverages; lipid alteration, overweight and obesity	No	Yes

E4 ⁹	To evaluate the prevalence reasons for a sedentary lifestyle and risk factors in a group of university students	Risk factors for a sedentary lifestyle were assessed, it was found that older students have a prevalence of a sedentary lifestyle. Sedentary students have a higher heart rate	Sedentary lifestyle	No	No
E5 ¹⁰	Assess and examine cardiovascular risk factors in university students, their nutritional and social choices and how they influence their cardiovascular health	<ul style="list-style-type: none"> - 44.6% report a family history of heart disease - 22.6% are smokers; - 13.5% had high blood pressure - 25.7% stage I hypertension and 3.4% stage II hypertension - 36.5% were overweight and 18.9% were obese. - 14.2% were pre-diabetic and 2% diabetic - 40.5% of participants had borderline high cholesterol levels, while 3.4% of participants had hyperlipidemia. - 65.5% report drinking alcohol 	Smoking; arterial hypertension; overweight and obesity; diabetes mellitus; lipid alteration, alcohol consumption	Yes	Não
E6 ¹¹	Assess the prevalence of physical activity in health students	- 30% of the sample does not practice physical activity	Sedentary lifestyle	No	No

Source: Author, 2023.

lombia, the United States and Saudi Arabia with one (16.66%) study each.

Regarding the method, five (83.34%) articles were cross-sectional studies and one (16.66%) were observational, all six (100%) studies were classified as Oxford level of evidence.⁴

Thinking about a solid analysis of the research analyzed, Table 1 shows their details.

As can be seen in Table 1, the cardiovascular risk factors found were: consumption of alcoholic beverages, smoking, changes in weight, physical inactivity, increased cholesterol, stress, high blood pressure and type 2 diabetes mellitus.

The consumption of alcoholic beverages was mentioned in four (66.66%) studies, followed by a sedentary lifestyle and smoking in three (50%), overwei-

ght and obesity in two (33.34%), lipid changes in two (33.34%) and hypertension, diabetes mellitus and stress in one (16.66%) article each.

Furthermore, three (50%) articles also highlighted the presence of low income among the study population and the existence of a family history of cardiovascular diseases among students.

DISCUSSION

Cardiovascular risk factors, previously associated with the elderly, are also present in young adults, indicating a future increase in cardiovascular diseases, which are already a global health problem. Among the young population, university students are those who raise concerns for health professionals, since

the association between study, work and internships promotes a lack of time for physical activities, as well as greater carelessness with food, in addition to the stress generated. As a result, cardiovascular risk factors have increasingly been identified in this population.^{8,12}

In the recovery of scientific evidence carried out in this review, it was identified that the cardiovascular risk factors most found in university students, refer to the consumption of alcoholic beverages, smoking, changes in weight, physical inactivity, increased cholesterol, stress, high blood pressure and diabetes mellitus.

In a study carried out among university students in Côte d'Ivoire, it was found that 42.5% of the sample reported active alcohol consumption and only 8% identified it as a risk factor for the development of cardiovas-

Relato de Caso EN

Guilherme P. Marques, Ana C.S. de Almeida, Tamires F.L. Sobrinho, Harriet B. Maruxo, Harriet B. Maruxo, Rosana S., Marcos A.E. Frias, Valclei A.G. Pereira
Scientific evidence on cardiovascular risk factors in health students: integrative review

cular disease.¹²

In Brazil, alcohol consumption varies from 66.3% to 91.9%, being one of the most consumed substances among young people, mainly in the university context, since this public experiences different situations, such as university fraternizations, contact with colleagues who already have a drinking habit, distance from family, among others, which explains the presence of this cardiovascular risk factor in the public in question.¹³⁻¹⁴

In addition to alcohol consumption, smoking was another cardiovascular risk factor cited among the publications analyzed. In a study carried out at a public university in Mexico, it is evident that 24.5% of students are smokers, on the other hand, in Brazil, in the city of São Paulo, another study shows a prevalence of 7.5% among students entering the nursing course.^{8,15}

Despite the differences between the numbers found, programs aimed at preventing smoking are important and necessary, which should begin at school, drawing attention to the harm that cigarettes can cause. In this context, primary health care plays a fundamental role, as through school groups on smoking, children can raise awareness among adults about this habit, encouraging them to participate in smoking groups in primary care health units.¹⁶

Another risk factor found was Hypertension, the literature of which indicates rates of 33.5% in the university population, which still reports in 9.9% of situations, the addition of salt during meals. Hypertension is one of the main risk factors for the development of cardiovascular diseases, associated with strokes, heart attacks and heart failure, with its onset currently identified in adolescence and persisting throughout adulthood.¹⁷

A sedentary lifestyle and changes in weight are other risk factors highlighted in the literature. In a study carried out with nursing students at a public university in the city of São Paulo, it was identified that 73.1% of them had a sedentary lifestyle, while 25.4% were overweight and obese to varying degrees.¹⁵

The presence of lipid and glycemic changes found in the articles analyzed corroborates findings in the literature, bringing rates of

16.4% in the case of lipid profile and 6.1% in relation to diabetes mellitus. It is important to highlight that the presence of changes in the lipid profile is associated with high blood pressure and, consequently, with cardiovascular diseases.¹⁸

Stress, the last risk factor found, influences different conditions such as weight-related changes and high blood pressure. It is noteworthy that the academic environment, the increase in responsibilities and the overload of activities, contribute to the exacerbation of this. Therefore, activities aimed at rapid identification or means of prevention and/or dealing with the situation should be encouraged in universities.³

In addition to the cardiovascular risk factors identified, the presence of low income was verified in part of the studies analyzed. Some scientific findings show that there is currently a reduction in cardiovascular diseases in developed countries, with mortality rates of 75% in low- and middle-income countries, indicating an association between income and cardiovascular diseases.¹²

Family health history with the existence of cardiovascular diseases and/or risk factors for this is a situation that requires attention, since in a study carried out with nursing students in Paraná, the presence of heredity was identified in 28% of the sample, meaning that the family already presents some risk factor for the development of cardiovascular diseases. Under these conditions, the student would have a greater chance of developing such pathologies in the future.¹⁹

The university environment takes the student to a series of new responsibilities and assignments that promote changes in their lifestyle. From this, it becomes important to develop preventive programs and actions through which academics can identify the most prevalent risk factors in the university environment, as well as seeking a change in your habits so that they do not become harmful in the future in terms of health aspects.

Thinking about cardiovascular diseases and their increase, the Ministry of Health prepared the Strategic Actions Plan for Tackling Chronic Diseases and Non-Communicable Diseases in Brazil 2021-2030. This plan seeks to reduce premature deaths related

to cardiovascular diseases by one third, to do this, it is necessary to work on risk factors, so the goal is to reduce obesity among adults, increase physical activity by 30% and also increase the consumption of fruits and vegetables by 30%. In addition to these, the aim is to reduce the consumption of alcoholic beverages by 10% and reduce smoking by 40%.²⁰

CONCLUSION

Cardiovascular risk factors permeate the lives of the entire population, being in great evidence nowadays in the academic population, who becomes more exposed to these factors due to constant and different changes in their lifestyle, since students will sometimes be away from family, having to balance studies with work and other demands, also influencing the level of physical activity, the consumption of quick snacks, an unbalanced diet and skipping meals.

Therefore, knowing and intervening in such risk factors becomes a necessity for health professionals, who must start to develop health education strategies aimed at the academic public regarding the risks that exposure to these factors can entail.

Strategies that can be carried out in the university environment include the use of educational pamphlets and posters, lectures and awareness-raising activities about cardiovascular risk factors in common university environments, in addition to nutritional guidance and anthropometric verification activities.

It is necessary to raise awareness among university students about the risks they are exposed to, in order to avoid or even reduce them. Sometimes the university student himself is not aware of the risk factors to which he is exposing himself, or is even unaware of preventive methods. As health professionals, it is important to carry out health education actions, aiming to inform the academic population about such issues, with a view to reducing such risk factors in the future, in line with the proposals of the Ministry of Health.

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