DATA ANALYSIS OF RISK FACTORS FOR NON-COMMUNICABLE CHRONIC DISEASES IN UNIVERSITY STUDENTS AT UNIEVANGÉLICA

Gustavo Henrique de Oliveira Carmo Borges [1]
Anna Carollina Barbosa Gomes [2]
João Marcos Luiz da Silva [3]
Carla Santos Bastos [4]
Emily Carolina Assis Oliveira [5]
Vinicius Salermo Kanuf [6]
Jalsi Tacon Arruda [7]

Universidade Evangélica de Goiás[1234567]

ABSTRACT
Systemic arterial hypertension (SAH) is considered one of the most prevalent non-communicable chronic diseases (NCDs) worldwide. This condition presents modifiable risk factors—such as inadequate sleep, smoking, alcohol consumption, and sedentary behavior—which may be associated with the exhaustive routine of medical students. This study investigated the relationship between NCD risk factors among medical students at UniEVANGÉLICA and elevated blood pressure (BP), as well as the potential development of SAH. Data were collected via a structured questionnaire and blood pressure measurement. Analyses revealed that smoking was the risk factor most associated with increased systolic (SBP) and diastolic blood pressure (DBP), and there was a relative increase in mean DBP among sedentary students and those who sleep five hours or less per day. Alcohol consumption showed no significant variation in SBP or DBP compared to the overall mean; however, it was a common habit among 72.8% of the sample.

Keywords: Non-communicable diseases; Medical students; Hypertension.

INTRODUCTION

In recent decades, human lifestyle changes have directly impacted health, increasing the incidence of Non-Communicable Chronic Diseases (NCDs), which are responsible for high morbidity and mortality worldwide and entail significant social and economic costs, with emphasis on Systemic Arterial Hypertension (SAH) (VERAS et al., 2007).

[1]Discente de medicina da Universidade Evangélica de Goiás (UniEVANGÉLICA). (ghborges2021@gmail.com)
[2]Discente de medicina da Universidade Evangélica de Goiás (UniEVANGÉLICA). (anna.carollina36@hotmail.com)
[3]Discente de medicina da Universidade Evangélica de Goiás (UniEVANGÉLICA). (joao.luiz@aluno.unievangelica.edu.br)
[4]Discente de medicina da Universidade Evangélica de Goiás (UniEVANGÉLICA). (carlabastos513@gmail.com)
[5]Discente de medicina da Universidade Evangélica de Goiás (UniEVANGÉLICA). (emilyassis19@gmail.com)
[6]Discente de medicina da Universidade Evangélica de Goiás (UniEVANGÉLICA). (vinikanuf@gmail.com)
[7]Docente de medicina da Universidade Evangélica de Goiás (UniEVANGÉLICA). (jalsitacon@gmail.com)

SAH, the main risk factor for cardiovascular diseases, affects approximately 31% of the adult population. Its primary risk factors include overweight, smoking, excessive sodium and alcohol intake, inadequate sleep, and sedentary lifestyle (MENEZES et al., 2020). These modifiable risk factors are highly influenced by environmental and behavioral aspects, such as the full-time curriculum and high pressure faced by medical students (SILVA et al., 2012).

This study aimed to investigate the relationship between NCD risk factors among medical students at the Universidade Evangélica de Goiás and elevated blood pressure (BP), as well as the potential development of SAH. The evaluated risk factors included poor sleep quality and duration, sedentary lifestyle, alcohol consumption, and smoking.

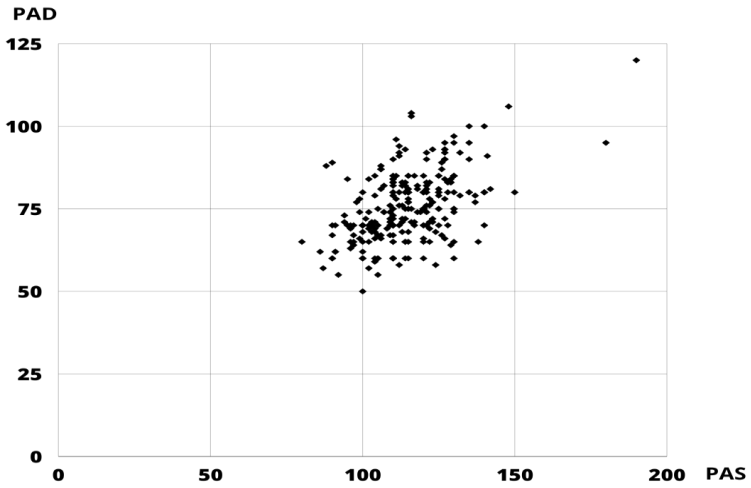
METHODOLOGY

This observational study investigated the relationship between blood pressure and NCD risk factors (sleep, sedentary behavior, smoking, alcohol consumption) during the 2022/2023 academic period. Participants completed a structured questionnaire covering demographic information, dietary habits, physical activity, sleep quality, and academic performance. Anthropometric measurements were taken, and BP was measured twice on different arms. Data were recorded in Excel and analyzed. The study was approved by the Research Ethics Committee (CAAE 35109420200005076).

RESULTADOS

A sample of 267 students from different periods of the medical program was obtained, including students from the first to the last year of the course. Among these, 71.9% were female and 28.1% male; ages ranged from 18 to 46 years, with the majority of participants falling between 19 and 24 years old. Most participants self-identified as White (71.6%), 26.5% as Brown, 1.1% as Asian, and only 2 participants identified as Black. Based on blood pressure (BP) measurements, 66 individuals exhibited elevated mean BP (24.72% of the total), of whom 17 had only elevated systolic BP (SBP), 34 had only elevated diastolic BP (DBP), and 15 had alterations in both (Graph 1).

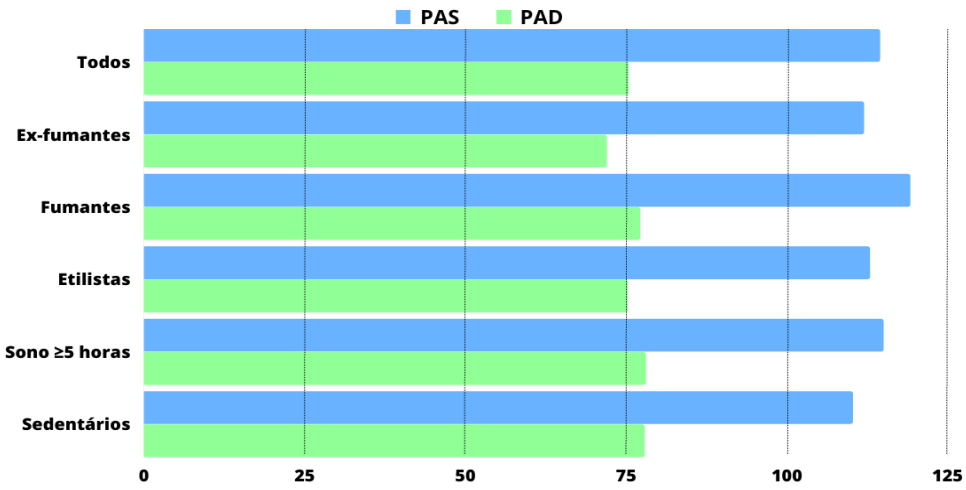
Gráfico 1. Média da PA aferida de todos os participantes da pesquisa representada em gráfico de dispersão de PAS x PAD.



Fonte: Autoria própria.

Based on the mean SBP and DBP of all 267 study participants (mean SBP = 114.5 mmHg and mean DBP = 75.42 mmHg), a reference baseline was established to determine the potential correlation between the assessed risk factors for NCDs and changes in BP, as represented in Graph 2. After data collection and classification of individuals according to BP, possible correlations with other NCD risk factors—such as smoking, alcohol consumption, physical inactivity, and inadequate sleep—were evaluated. In this study, participants were considered to have elevated BP when systolic blood pressure (SBP) was greater than or equal to 130 mmHg and/or diastolic blood pressure (DBP) was greater than or equal to 85 mmHg.

Gráfico 2. Comparação da PAS e PAD média conforme os fatores de risco para DCNTs avaliados.



Fonte: Autoria própria.

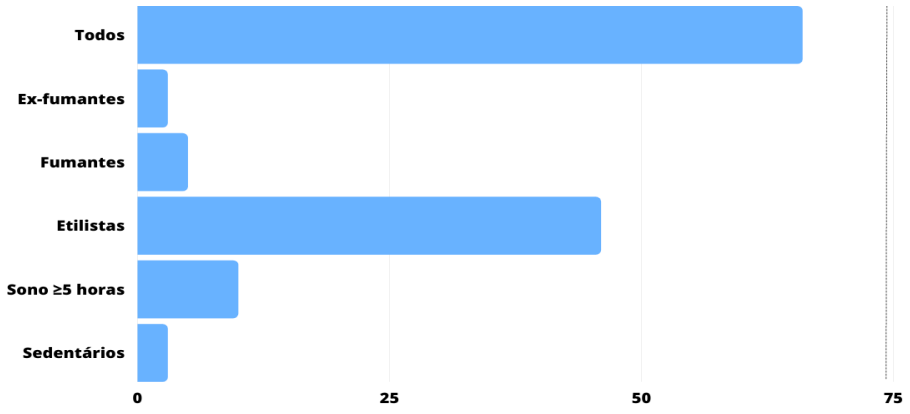
During the study, students' sleep quality was assessed, as well as the impact of the academic period on sleep patterns. It was found that approximately 88% of participants slept less during the school term, and 17.7% slept 5 hours or less per day, characterizing inadequate sleep.

Regarding alcohol consumption, only 28.2% of the sample reported abstaining from alcoholic beverages, making alcohol consumption the most prevalent risk factor in this population. Concerning smoking, 13.2% were identified as current smokers and 4.5% as former smokers. Among the smoking group, 16% exhibited elevated blood pressure.

Finally, Graph 3 was created to illustrate the relationship between the total number of students with altered blood pressure at the time of measurement and the number of these students who engaged in each of the risk factors evaluated in the study.

.

Gráfico 3. Relação entre a quantidade total de estudantes com a PA alterada e a quantidade desse grupo que pratica fatores de risco.



Fonte: Autoria própria.

Conclusion

Based on these data, it is evident that there was a significant alteration in blood pressure among medical students at the time of measurement—almost one-quarter of the sample—which may have been influenced by various factors. Smoking emerged as the risk factor most strongly associated with increased blood pressure. Alcohol consumption did not show a significant divergence from the overall mean

systolic/diastolic blood pressure; however, it was the most prevalent harmful lifestyle habit. Finally, physical inactivity and inadequate sleep showed some relevance regarding elevated diastolic blood pressure, with the latter being particularly prevalent, highlighting the impact of medical school on students' lifestyle habits.

REFERENCE

Menezes TC, Portes LA, Silva NCOV. Prevalência, tratamento e controle da hipertensão arterial com método diferenciado de busca ativa. Cad saúde colet [Internet]. 2020;28(3):325–33. https://doi.org/10.1590/1414-462X202028030357

Silva DAS, Pereira IMM, Almeida MB, Silva RJS, Oliveira ACC. Estilo de vida de acadêmicos de educação física de uma universidade pública do estado de Sergipe, Brasil. Rev Bras Ciênc Esporte [Internet]. 2012;34(1):53–67. https://doi.org/10.1590/S0101-32892012000100005

Veras VS, Monteiro LZ, Landim CAP, Xavier ATF, Pinheiro MHNP, Montenegro Júnior RM. Levantamento dos fatores de risco para doenças crônicas em universitários. RBPS. 2007;168–72. https://www.redalyc.org/articulo.oa?id=40820306