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ACTIVE VERSUS SEDENTARY DURING SOCIAL ISOLATION: CARDIOVASCULAR RISK FACTORS AMONG MEDICAL STUDENTS

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Abstract: The lifestyle of medical students has been observed because it can result in the contraction of cardiovascular diseases. It is necessary to understand that healthy habits decrease the risk of heart disease, and it is essential to monitor these students, observing the risk factors such as the diet, physical exercise practice and use of cigarettes, which can result in a change in quality of life. In this sense, the objective of this study was to compare groups of medical students from the basic cycle of ''Centro Universitário Estácio" in Ribeirão Preto during social isolation due to the COVID-19 pandemic, in order to evaluate the risk of cardiovascular diseases. A literature-modified sedentary lifestyle test questionnaire was applied to students in the basic medical cycle at the Centro Universitário Estácio de Ribeirão Preto. The methodology is described as quantitative because it uses a sample of people, and is classified as non-experimental (no intervention). The results showed that isolation reduced the practice of physical activities and increased consumption of industrialized products. In a pandemic context, it was observed that the measures adopted by the medical students had a direct impact on the health of these individuals. Thus, the changes for a healthy routine that can improve the quality of life of students, the practice of physical exercises, proper nutrition and the habit of not smoking may reduce the risks of contracting cardiovascular diseases.

Keywords: Students, cardiovascular disease, risk factors, health promotion.

INTRODUCTION

Numerous studies prove the relationship between cardiovascular diseases and the lifestyle of individuals, which are related to risk factors for contracting heart diseases (ALWABEL et al., 2018; LAVIE et al., 2019; LOBELO et at., 2018). Sedentary behavior and physical inactivity are among the main modifiable risk factors in different global sources for cardiovascular disease and all-cause mortality. In this context, the negative impact of sedentary behavior and physical inactivity are offset by the beneficial effects of physical activity and cardiorespiratory fitness in the prevention of chronic non-communicable diseases, including cardiovascular diseases (LAVIE et al., 2019).

In the initial stage of their careers, new medical science students are more vulnerable to adopt unhealthy lifestyles, which may be due to the challenge of living independently without parental restrictions, changing eating behavior, high academic demand with longer sedentary period in lectures, screen time and at the same time managing an active social life (FAN et al., 2020).

In one study, the importance of physical activity in the practice of health promotion was evaluated, generating positive results. In this study, physical activity also plays a significant role, in many cases comparable or superior to drug interventions, in the prevention and management of 40 conditions, such as diabetes mellitus, cancer, cardiovascular disease, obesity, depression, Alzheimer's disease and arthritis. With the participation of clinical and community care providers, fitness professionals, the technology industry in helping to promote health (LOBELO et at., 2018).

It is well established that poor cardiorespiratory fitness in young people is a prominent risk factor for developing cardiovascular disease, and regular exercise improves cardiorespiratory fitness (CRF) and reduces mental stress. It was reported that exercise sessions at least once during the weekend reduced the risk of metabolic and cardiovascular diseases (FAN et al., 2020).

In this context, a survey of undergraduate students who practiced light physical activity before the COVID-19 pandemic, showed

that after isolation there was a significant reduction of 33.70% in physical activity, thus, participants who were the most active before the pandemic decreased physical activity altogether, leading to a significant increase in sedentary behavior in the total sample, with sedentary lifestyle being a risk factor for cardiovascular disease (BARKLEY et al., 2020). "While these data must be considered preliminary, we encourage college students and staff to be mindful of the time they spend sitting and take steps (e.g., taking activity breaks, using a standing desk) to limit this behavior."

During the COVID-19 pandemic, due to social distancing and, in many places, home isolation, an increase in sedentary lifestyle has been observed, including among younger people. Long-term lack of physical activity can result in increased body fat, muscle loss and cardiometabolic risk (NARICI et al., 2020).

Another study carried out earlier predicted the impacts that reducing physical activity during the pandemic could cause. In this, young men without comorbidities decreased the amount of daily steps and activities over 2 weeks. Consequently, after this period, the participants' cardiorespiratory capacity decreases by 7%, in addition to a reduction in lower limb lean mass and insulin sensitivity. These factors are independently responsible for the increase in mortality, which is why it is recommended that, even in the home environment, it is necessary to practice physical exercises (NARICI et al., 2020).

In this sense, the objective of this work is to evaluate the lifestyle of medical students in the basic cycle of Centro Universitário Estácio de Ribeirão Preto during the period of isolation in the COVID-19 pandemic, verifying the prevalence of sedentary people and practitioners of activities physical activities, associating these variables with cardiovascular risk factors.

METHODOLOGY
CHARACTERIZATION AND COLLECTION OF THE STUDY SAMPLE

Data collection was carried out through the application of a questionnaireelectronic application via Forms (Google) for groups of students through the WhatsApp application. Inclusion criteria refer to medical students at Centro Universitário Estácio de Ribeirão Preto in the basic cycle. The questionnaire used was previously validated and applied by Chalapud-Narvaez et al. (2019), with modifications. The questions seek to identify the students' biosocial profile, weight and height, the practice and frequency of physical exercises, the quality of food, the time spent using the computer, television and cell phone. The questions address risk factors classified as modifiable (BACK et al., 2019). Data referring to social class were questioned based on the profile recommended by the IBGE (2020) (Low Class up to 2 minimum wages, Lower Middle Class from 2 to 4 minimum wages, Middle Class from 4 to 10 minimum wages and Upper-Middle Class above 10 minimum wages).

STUDY METHODOLOGY

It is a descriptive exploratory research, with bibliographic surveys, field research with the application of questionnaires. The methodology used is described as cross-sectional qualitative, since there is data collection from a group of research subjects, moreover, it is classified as a non-experimental study for not obtaining intervention.

The research design was carried out through bibliographical research, with a field survey (Survey) through a direct questionnaire with Estácio's medical students in the basic cycle. A survey was carried out of the risk factors for cardiovascular diseases,

associated with the sedentary lifestyle of students, in addition to this, the situation of the lifestyle of medical students during the COVID-19 pandemic. The results were analyzed using descriptive statistics with presentation through percentages and tables for a better understanding of the data using Microsoft Excel.

ETHICAL ASPECTS

The project was included in the Research Ethics Committee, in the approved opinion number2.190.926, CAAE 70621517.0.0000.5581 of Estácio "Centro Universitário de Ribeirão Preto". The research subjects received the Informed Consent Form (TCLE) before completing the questionnaire, to confirm their awareness of participation in the project.

RESULTS AND DISCUSSION

The number of students in the basic cycle of the medical course at Centro Universitário Estácio de Ribeirão Preto who agreed to participate in the research was 122 students out of a total of approximately 150 students enrolled during the study period.

The results found through the analysis of the questionnaire data were organized in tables and descriptive statistics were performed for a better interpretation of the results. According to Table 1, 122 students (81.33%) from the basic cycle participated in the research, out of approximately 150 students regularly enrolled in 2020. The largest participation was from students in the 1st semester, 33.61%.

Semester	Number of students	%
1	41	33.61%
2	21	17.21%
3	32	26.23%
4	28	22.95%
Total	122	100%

Table 1: Number of students in the basic cycle of medicine at the "Centro Universitário de Ribeirão Preto" - SP participating in the research.

Source: authors.

As for the socioeconomic stratum, the results obtained by the participants indicate that the majority (54.92%, 67 students) are classified as medium, 40 students (37.79%) as medium, 11 students (9.02%) as medium-high and 4 students (3.28%) as low.

For the analysis of this research, 6 degrees of risk were agreed, which had the same weight for the comparison of risk factors, which were: BMI above 25, hypertension, heart disease, physical activity, alcohol consumption (above 2 times a week) and be a smoker. This way, it was possible to classify students according to the amount of exposure to risk factors that students are, which increase the chances of cardiovascular diseases.

As for the 6 risk factors for exposure, it was possible to calculate the incidence and prevalence, as shown in Table 2. Since the incidence value refers to the total number of students who answered the questionnaire (122) and the prevalence refers to the number of students who presented some type of risk (110). Twelve students were not exposed to the six risk factors for cardiovascular disease considered in this study.

Type of Risk	Number of students	Incidence	Prevalence
BMI Over 25	44	36.07%	40.00%
Hypertension	18	14.75%	16.36%
heart disease	9	7.38%	8.18%
Physical activity	41	33.61%	37.27%
Alcohol (Over 2 Times a Week)	26	21.31%	23.64%
Smoke	13	10.66%	11.82%

Table 2: Type of risk that students are exposed to.

Source: authors.

Table 3 presents the amount of risk that students are exposed to. Thus, 42.73% of students (47 respondents) are exposed to at least 2 risk factors for cardiovascular disease, according to the questionnaire responses. Then, risk degree 1 considers that 30 students are exposed to only 1 risk, 27 students are exposed to 3 risk factors (24.55%) and only 6 students (5.45%) are exposed to 4 risk factors. investigated risk.

According to the results of medical students at Centro Universitário Estácio de Ribeirão Preto, the average age of participants was 21 years old, with 89% of students aged between 18 and 25 years old.

Number of risk factors	Number of students	Percentage at risk
1	30	27.27%
2	47	42.73%
3	27	24.55%
4	6	5.45%
5	0	0.00%
6	0	0.00%
Total	110	100%

Table 3: Number of students exposed to different amounts of risk factors for cardiovascular disease (n=110).

Source: authors.

A cross-sectional study, carried out in Saudi Arabia, on the prevalence of hypertension in medical students in the early years revealed a prevalence of 14.60% (ALWABEL et al., 2018), a pattern that is similar to the results obtained in the present study, where 14.75% of medical students (18 students) reported having a history of systemic arterial hypertension (Table 4). Among them, 3 students also reported having a history of heart disease. Furthermore, the "Universidade Médica de Barbacena"also found low rates of hypertension among its students (JUNIOR; BURGOS, 2020; JURCA et al., 2019; SANTOS et al., 2017). However, the risks for this condition, such as alcohol consumption and smoking are factors that must also be analyzed and taken into account.

History and Behavior	Number of students	%
Hypertensive	18	14.75%
Heart disease	9	7.38%
Practice physical activity	80	65.57%
Consume alcohol	93	76.23%
Smokers	13	10.66%
Use cell phone in free time	103	84.43%
Use computer in free time	40	32.79%
Watch TV in free time	31	25.41%
Read in free time	11	9.02%
Interact with family members in free time	3	2.46%

Table 4: History and behavior of research participants (n=122).

Source: authors.

Sedentary lifestyle is an important risk factor in the development of cardiovascular diseases. This way, the practice of physical activities and sports is of paramount importance, as a form of primary prevention for these conditions. However, there is a trend towards sedentary lifestyle, especially

among medical students, which may have worsened during the period of social isolation caused by the COVID-19 pandemic. This fact may be related to the integral nature of the course, making it difficult to practice physical activities on a daily basis. Among the 122 medical students who participated in the present study, 41 students (33.61%) do not practice physical activity, data that are similar to the numbers found in other studies (HARRINGTON et al., 2017).As for the number of days of practice in the week, 18.20% practice three times a week, 16.50% four times a week, 15.70% five times and 13.20% twice a week.

As for the average time to perform physical activity, it can be seen in Table 5 that 49.18% of students answered that the duration is between 30 and 60 minutes. Considering the weekly frequency, 77 students (63.11%) perform some physical activity more than twice a week. It must be considered that medical students have few hours of the day dedicated to the practice of physical exercises, and thus, a sedentary lifestyle becomes a risk factor for the contraction of cardiovascular diseases. The WHO (WHO, 2020) recommends that adults (18 to 64 years old) must practice at least 150 minutes of moderate to intense physical activity per week. Thus, it is inferred that students who are practicing between 30 and 60 minutes, more than once a week, are within the appropriate time.

Practice of Exercises	Number of students	Incidence
Over 60 minutes	19	15.57%
minus 30 minutes	3	2.46%
Between 30 and 60 minutes	60	49.18%
Not applicable.	40	32.79%

Table 5:Average time of physical activity of research participants (n=122).

Source: authors.

Regarding the change in the practice of physical activity with the pandemic, according to table 6, it was noted that 25 students did not change their routine with physical exercise, among them 13 students no longer exercised before the pandemic. In this context, the results showed that 42 students practice more physical activity during social isolation, with a 34.43% increase compared to 39 students who already performed physical exercise before isolation. Finally, 55 students responded that they performed less physical activity with the COVID-19 pandemic, with an emphasis on the 45.08% increase in more sedentary students compared to 26 students who no longer practiced physical activity.

Change in the practice of physical activity with the pandemic	Number of students	%
The person did not change +	25	20.49%
The person practices more physical activities ++	42	34.43%
The person performs less physical activity +++	55	45.08%

+13 students did not do physical activities; ++ 39 students were already doing physical activities; +++ 26 students did not do physical activities.

Table 6: Change in the practice of physical activity with the pandemic students of the basic cycle of medicine at Estácio of Ribeirão Preto – SP

Another risk factor related to cardio-vascular diseases is obesity, as shown in Table 7. Obesity is determined by the body mass index (BMI), which is calculated by dividing weight (in kg) by height (in meters) (W.H.O.). Most of the students observed in this study,59.02% is at the ideal weight. Overweight students added to students with obesity, these being grades 1, 2 and 3, account for 37.71% of the total incidence of research participants, who are overweight above normal weight, thus presenting risk factors for cardiovascular disease. The

prevalence of students with a BMI above 25 is 41.92%. Some factors that are related to obesity during the pandemic may be related to mental health, such as increased anxiety, which has been a very prevalent cause of weight gain among university students, as well as sedentary lifestyle habits and poor quality eating habits. the risk of being overweight, the high consumption of fast food, the omission of breakfast and even the exaggerated consumption of alcohol become risks for these students to become obese.

BMI (Kg/m²)	Number of students	%
Less than 18.5 – Underweight	4	3.28
Between 18.5 and 24.9 - Normal Weight	72	59.02
Between 25 and 29.9 - Overweight (above desired weight)	34	27.87
Between 30.0 and 34.9 – Grade 1 Obesity	11	9.02
Between 35.0 and 39.9 – Grade 2 Obesity	1	0.82
Above 40 – Obesity Grade 3	0	0

Table 7: Body Mass Index (BMI) of students in the basic cycle of medicine at the "Centro Universitário de Ribeirão Preto" – SP participating in the research (n=122).

Source: authors.

In this sense, it is extremely important to promote interventions such as voluntary physical activity practices or those encouraged by student movements, such as Associação Atlética Académica Dr. Fernando Nobre, improved diet and recommendations for a healthy lifestyle for students.

As for alcoholic beverages, 93 students (76.23%) reported that they consume them, with only those who consume more than twice a week being considered at risk (26 students, 21.31%). There is no safe intake of alcohol, however it is considered that regular daily consumption can increase the risk of cardiovascular diseases, regardless of the amount. According to table 8, 46.72% (57 students) answered that they consume alcohol 2 to 4 times a month. As for the number of students who consume alcohol 2 to 3 times a week, which represents the population at risk, the prevalence found was 22.73%.In terms of changes in alcohol consumption among medical students, 36.89% (45 students) reported an increase and 24.59% (30 students) reported a decrease. Among the population at risk, the increase in consumption represents 48.39%, and the reduction 26.79%. As in the literature, an online survey was conducted with 44,062 participants, which revealed that 18% of the population aged 18 years or older reported increased use of alcoholic beverages during the pandemic (GARCIA, 2020; SANCHEZ, 2020). The higher consumption of alcoholic beverages has a direct impact on the student's life, because with continuous use and in large quantities, alcoholism can develop and lead to impacts associated with cardiovascular diseases. Thus, it becomes necessary, at the time of social isolation, to discuss the issue of the effect of alcohol on mental health.

As for the use of cigarettes, according to the data obtained (Table 8), 89.30% of the research participants (109) claimed not to use them, while 10.70% (13) reported that they did. Among those who increased cigarette consumption during the pandemic, the incidence shows that there was an increase of 7.38% in relation to the total number of students, and among smokers 69.23% increased cigarette consumption. According to Malta et al. (2021) Worsening mental health, sleep quality, self-assessed health status, and lack of income are factors associated with increased cigarette consumption among Brazilian adults during the COVID-19 pandemic. Therefore, health

promotion actions aimed at adopting or maintaining healthy behaviors, such as targeted messages on social media and guidance by health professionals, especially in primary health care, must be used to mitigate psychological distress and unhealthy behaviors., such as smoking. In addition, strategies for preventing tobacco use and promoting smoking cessation must be continued and reinforced during the period in which social distancing measures are in effect, so that the burden arising from tobacco consumption does not further aggravate the health situation of the population in the context of the COVID-19 pandemic.

According to Hiep et al. (2020), medical students are future health professionals who need comprehensive capabilities to improve their self-care and strengthen patients' autonomy, participation, and self-management skills. When considering the current context of public health measures implemented in all countries to contain the spread of COVID-19 such as quarantine and social distancing, it must be noted that these approaches have negative effects on people's mental health. The general public is urged to maintain social distancing and work and study remotely if possible during the pandemic. However, health professionals still have to work and continue to provide care, as they are more likely to have psychological health problems.

Factors such as advanced age or a later school year, being male, greater ability to pay for medications, and a higher degree of health education may protect medical students from fear during the pandemic. Althoughonly 10.70% use cigarettes and only 7.40% of students, from a sample space of 122 participants, have increased their use, it is important to investigate and follow up with students in this area of health, who have been showing changes in their basic routine

Alcohol consumption	Number of students	Incidence	Prevalence
1 time per month	10	8.20%	AT
2 to 3 times a week	25	20.49%	22.73%
2 to 4 times a month	57	46.72%	AT
4 or more times a week	1	0.82%	0.91%
The person does not consume alcoholic beverages	29	23.77%	AT
Alcohol consumption during the pandemic			
Increased	45	36.89%	48.39%
Decreased	30	24.59%	26.79%
Not applicable	47	38.52%	AT
Cigarette consumption during the pandemic			
Increased	9	7.38%	69.23%*
Decreased	4	3.28%	30.77%*
Non smokers	109	89.34%	AT

*Prevalence calculated from the number of smoking students (n=13). N/A: not applicable to population at risk.

Table 8: Alcohol and cigarette consumption amongstudents of the basic cycle of medicine at the "Centro Universitário de Ribeirão Preto" – SP (total n=122, n at risk=110).

Source: authors.

after social isolation. According to Hiep et al. (2020),students most affected by fear of the pandemic are more likely to have unhealthy lifestyles, such as smoking and consuming alcohol. Strategic public health interventions are suggested to reduce discouragement and promote healthy lifestyles that can further protect students' health and well-being.

According to the results obtained, 66.90% of medical students are eating more, 12.40% are eating less and 20.70% have not changed. According to research data by Malta et al. (2020) the frequency of consumption of healthy foods decreased in the Brazilian population during the pandemic.

According to table 9, in relation to the 122 participants, there is an increase of 67.21% among students in the basic cycle, the amount of food consumed increased with social isolation. As previously noted in Table 7, the percentage of overweight and obese people is related to the increase in the amount of food consumed, requiring an intervention to improve the quality of life of these medical students, in addition to a decrease in risk factors. risk for cardiovascular disease and the development of other chronic diseases related to sedentary lifestyle and obesity.

Diet changes during the pandemic	Number of students	Incidence
Yes, I am eating more.	82	67.21%
Yes, I am eating less.	15	12.30%
Did not change	25	20.49%

Table 9. Change in the amount of food consumed with the social isolation of medical students at Estácio of Ribeirão Preto - SP.

Source: Authors.

The data found in this work differ from those found indragun et al.(2021), whichconducted a questionnaire with 76 medical students comparing before the pandemic and after the pandemic. According to the authors, 10.00% of international medical students reported experiencing a decrease in fruit and vegetable intake during the lockdown, compared to their usual pre-COVID-19 habits. Among medical students at Estácio, in which the incidence of students who said they increased their diet was 67.21% and in the analysis of qualitative questions, a reduction in the quality of food after the pandemic was observed, which will be discussed in the next paragraph. This change can lead to overweight, evidenced in the number of students with BMI above 25 (37.70% of the total sample) being one of the risk factors for cardiovascular diseases.

The quality of food of medical students decreased, as it was portrayed in the responsesopened by medical students some facts such as, for convenience, the preference for consumption of industrialized products. The development of psychic problems becomes a great trigger for the consumption of foods that are not healthy, but that provide pleasure at the moment. Among the responses, only 7.00% of improvement in the quality of food was observed, as there was an incentive to visit a nutritionist, according to the reports. As for the maintenance of food, 17.00% of the students did not feel a sudden change in their behavior and habits. Convincing evidence has shown that eating habits are also affected by distress conditions and emotional disturbances, where high levels are associated with poor diet quality (RIBEIRO-SILVA et al., 2020).

In the qualitative results, it is observed that the majority of the sample group answered that they spend their free time on cell phones, computers and television. With regard to food, the students were asked through the questionnaire if, with social isolation, they were eating better, with a yes or no answer, accompanied by an explanation. It was then

possible to observe thatbefore the pandemic, 2.45% of students followed a diet. Now with isolation and anxiety, these students ate more and sometimes even wrongly, but are currently managing to return to normal. Already 4.90%were the ones who were able to eat better quality food, because, according to them, they had more time to prepare food and 2.45% of these students reported that they were eating better quality food, after consulting with a nutritionist. While 16.40% of students claimed that they maintained the same diet they had before the pandemic, without change, 22.95% reported that they were not eating quality food after social isolation, and 5.73% eating more with industrialized foods. Another 8.20% of the students claimed that they even consumed more "bullshit", and 3.27% being food that was easy to prepare. An average of 1.63% of the questionnaire reported eating with quality only a few times, others with the same percentage claimed to eat more chocolate than before because of anxiety, and more times a day, and even though, due to day-to-day obligations, there was not enough time to prepare adequate food. As well as another 1.63% commented that they were eating more often throughout the day and more "junk" and 4.90% said they were eating ready-to-eat foods/fast food, as well as sweets at a much higher frequency than before. 5.73% reported that they were eating worse, and 3.27% of the survey also said no, as it was more difficult to make food at home and that eating in general was not very healthy. As for food and anxiety, 5.73% commented that anxiety often ended up making them eat more and 0.80% of students said that in addition to eating more sweets, "everything became even more complicated with many people in the same house", according to the written account, justified by the difficulty of having a diet that would please everyone

in the house. Approximately 2.00% of the students even said that they ate a little worse because they stayed at home all day. Among the 122 students who responded, 16.40% explained that they maintained their diet as they had before social isolation. Ten percent responded that they were eating better. While the other 73.80% justified that they were not eating better after social isolation.

CONCLUSION

Through the analysis of the data obtained by the present work, it can be concluded that students of the basic cycle presented a less healthy lifestyle during the period of the COVID-19 pandemic in the year 2020. An increase in the frequency of eating is notorious, which is less healthy than the one consumed before the pandemic period. Furthermore, there was an increase in the use of cigarettes and alcohol consumption, these being important factors that contribute to the emergence of cardiovascular diseases. Added to this, students reduced the practice of sports and physical activity. Therefore, measures aimed at reducing cardiovascular risks among medical students in the basic cycle are of paramount importance, since these are high.

Students who participated in the study showed a higher prevalence of sedentary lifestyle in the face of the current pandemic. With this, it is necessary to carry out health education campaigns and activities, with the objective of providing guidance on the risk of developing heart diseases and also to promote health and reduce the aggravations of this condition. Thus, contributing to changing lifestyle habits, especially during the quarantine period. One can include online lectures with professionals from the health areas with the administration of themes for these students, with the aim of adding knowledge to a healthy living

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practice in this context, such as what has been observed by the NAEM (Núcleo de Apoio ao Estudante de Medicina) which offered lives with topics such as: "Mental health in the COVID-19 pandemic" and "Welcoming existential suffering in times of uncertainty". In addition, themes of lives could be addressed that would help students in times of a pandemic, with topics such as the organization of online classes; ways to keep mental health in balance with social isolation; specific lectures on the individual's behavior in isolation and risk factors for the human body.

Thus, with the results, it was observed that it is necessary to encourage an increase in the frequency of physical activity in this group of students. This way, it would be useful to send messages encouraging people to move, and to provide help from a physical education professional, who would present physical exercises that could be performed at home, respecting social distancing measures. Thus, one could expect a reduction in risk factors and a decrease in the chances of developing cardiovascular diseases among students in the basic cycle at Estácio de Ribeirão Preto.

THANKS

REFERENCES

ALWABEL, A. H. *et al*. Assessment of hypertension and its associated risk factors among medical students in Qassim University. **Saudi J. Kidney Dis. Transpl.**, v. 29, n. 5, p. 1100–1108, 1 Sep. 2018. https://doi.org/10.4103/1319-2442.243959. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/30381506/>. Acesso em: 07 de mar. 2021.

BACK, I. R. *et al*. Fatores de risco para doenças cardiovasculares em universitários: diferenças entre os sexos. **Cienc. Cuid. Saude**. v. 18, n.1,Jan 2019. Disponível em: <http://periodicos.uem.br/ojs/index.php/CiencCuidSaude/article/view/40096/pdf>. Acesso em: 23 mar. 2021.

BARKLEY, J. E.*et al*. The Acute Effects of the COVID-19 Pandemic on Physical Activity and Sedentary Behavior in University Students and Employees. **Int. J. Exerc. Sci.,** v. 13, n.5, p.1326-1339. 1 Sep. 2020. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7523895/>. Acesso em: 10 de mar. 2021.

CHALAPUD-NARVAEZ, L. M.; MOLANO-TOBAR, N. J.; ORDONEZ-FERNANDEZ, M. Y. Niveles de sedentarismo de una institución educativa en Popayán, Colombia. **Univ. Salud, Pasto**, v. 21, n. 3, p. 198-204, Dec. 2019. Disponível em: <http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0124-71072019000300198&lng=en&nrm=iso>. Acesso em: 20 de abr. 2020. http://dx.doi.org/10.22267/rus.192103.156

DRAGUN, R. *et al*.Have Lifestyle Habits and Psychological Well-Being Changed among Adolescents and Medical Students Due to COVID-19 Lockdown in Croatia?.**Nutrients,** v. 13, n. 1, p. 97, 2021.Doi:10.3390/nu13010097. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7830522/>. Acesso em: 10 de mar. 2021.

FAN, L.*et al*. Impact of unhealthy lifestyle on cardiorespiratory fitness and heart rate recovery of medical science students. **BMC Public Health**, v. 20, n. 1, Reino Unido, p. 1-8, 26 jun. 2020. Disponível em: <https://bmcpublichealth.biomedcentral.com/track/pdf/10.1186/s12889-020-09154-x.pdf>. Acesso em: 7 de mar. 2021.

GARCIA, L. P. ; SANCHEZ, Z. M. Consumo de álcool durante a pandemia da COVID-19: uma reflexão necessária para o enfrentamento da situação. Espaço Temático: COVID-19 - Contribuições da Saúde Coletiva. **Cad. Saúde Pública,** v. 36, p.10, 26 Out 2020. Disponível em: <https://www.scielosp.org/article/csp/2020.v36n10/e00124520/#>. Acesso em: 09 de nov. 2020. <https://doi.org/10.1590/0102-311X00124520>.

HARRINGTON, J. L.*et al*.Sedentary Behavior and Subclinical Cardiac Injury.**Circulation**, v. 136, n. 15, p. 1451–1453, 10 Oct. 2017. Disponível em: <https://www.ahajournals.org/doi/full/10.1161/circulationaha.117.029493>. Acesso em: 14 de mar 2021.

HIEP, T. N.*et al.*Fear of COVID-19 Scale—Associations of Its Scores with Health Literacy and Health-Related Behaviors among Medical Students. **Int. J. Environ. Res. Public Health.** v. 17, n. 11, p. 4164. https://doi.org/10.3390/ijerph17114164. Disponível em: https://www.mdpi.com/1660-4601/17/11/4164. Acesso em: 25 de mar. 2020.

IBGE. Instituto Brasileiro de Geografia e Estatística. Disponível em: <https://www.ibge.gov.br/>. Acesso em 12 de nov. 2020.

JUNIOR, C. W.; BURGOS, U. M. Evaluation of Cardiovascular Risk Factors in Medical Students: Literature Review. **Brazilian Journal of health Review. Rev. Curitiba**, v. 3, n. 5, p. 14378-14390 set/out. 2020. Disponível em:<https://www.brazilianjournals.com/index.php/BJHR/article/view/18134>. Acesso em: 26 de mar. 2021.

JURCA, C. F.*et al*. **Prevalência de fatores de risco cardiovascular em estudantes de medicina.**Trabalho de Curso apresentado à disciplina deIniciação Científica do Curso de Medicina daUniEVANGÉLICA. Centro Universitário de Anápolis – Unievangélica. Anápolis, Goiás 2019. Disponível em: <http://repositorio.aee.edu.br/jspui/bitstream/aee/8277/1/9%20TC%2020192.pdf>. Acesso em: 26 de mar. 2021.

LAVIE, C. J.*et al*. Sedentary Behavior, Exercise, and Cardiovascular Health. **Circ Res.**v.124, n.5, p. 799-815. 2019. Doi: 10.1161. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/30817262/>. Acesso em: 07 de mar. 2021

LOBELO, F.*et al*. American Heart Association Physical Activity Committee of the Council on Lifestyle and Cardiometabolic Health; Council on Epidemiology and Prevention; Council on Clinical Cardiology; Council on Genomic and Precision Medicine; Council on Cardiovascular Surgery and Anesthesia; and Stroke Council. Routine Assessment and Promotion of Physical Activity in Healthcare Settings: A Scientific Statement From the American Heart Association.**Circulation.**May 1, v. 137, n. 18, p. e495-e522.Epub 2018. PMID: 29618598. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/29618598/>. Acesso em: 07 de mar. 2021.

MALTA, D. C.*et al*. A pandemia da COVID-19 e as mudanças no estilo de vida dos brasileiros adultos: um estudo transversal, 2020. **Epidemiol. Serv. Saúde**. v. 29, n. 4,2020. Disponível em:<https://scielosp.org/article/ress/2020.v29n4/e2020407/#>. Acesso em: 09 de nov. 2020. <https://doi.org/10.1590/S1679-49742020000400026>.

MALTA, D. C. *et al*. Fatores associados ao aumento do consumo de cigarros durante a pandemia da COVID-19 na população brasileira. **Cad. Saúde Pública**, v. 37, n. 3, 2021. Disponível em: <https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2021000300506&lang=pt>. Acesso em: 10 de maio 2021.

NARICI, M. *et al*. Impact of sedentarism due to the COVID-19 home confinement on neuromuscular, cardiovascular and metabolic health: Physiological and pathophysiological implications and recommendations for physical and nutritional countermeasures. **Eur. J. Sport Sci.**, v. 12,p. 1-22, 2020.Doi: 10.1080/17461391.2020.1761076. Epub ahead of print. PMID: 32394816. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/32394816/>. Acesso em: 8 de março 2020.

OMS. Organização Mundial da Saúde. **Obesidade: prevenção e controle da epidemia global.** Genebra: OMS, 1998 [citado em 17 de outubro de 2018]. Disponível em: <https://www.who.int/nutrition/publications/obesity/WHO_TRS_894/en/>. Acesso em: 23 de março 2021.

RIBEIRO-SILVA, R. C.*et al*. Implicações da pandemia COVID-19 para a segurança alimentar e nutricional no Brasil. **Ciênc. saúde coletiva**, Rio de Janeiro, v. 25, n. 9, p. 3421-3430, Set. 2020. Disponível em: <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232020000903421&lng=en&nrm=iso>. Acesso em: 09 de Nov. 2020. Epub Aug 28, 2020. http://dx.doi.org/10.1590/1413-81232020259.22152020.

SANTOS, D.G. *et al*.Avaliação de fatores de risco e prevalência da hipertensão arterial sistêmica entre os acadêmicos do primeiro e oitavo períodos da Faculdade de Medicina de Barbacena. **Rev. Interdisciplin. Estud. Exp. Anim.**v.9, n.1, p. 29–36, 2017. Disponível em: <https://periodicos.ufjf.br/index.php/riee/article/view/24038>. Accesoem: 8 de nov. 2020.

WHO. World Health Organization.**Guidelines on physical activity and sedentary behaviour**. Geneva: World Health Organization, 2020. Disponível em: <https://apps.who.int/iris/bitstream/handle/10665/336656/9789240015128-eng.pdf>. Acesso em: 06 de abr. 2021.