

Primary Scientific Project in Evaluating the Quality of Life and Healthy Factors in Medical Students of a Private Brazilian University

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Abstract: Introduction: Limited data are available regarding medical students' habits related to long duration shifts and graduation classes that could negatively impact on their academic performance. The objective of this study is to identify the profile factors related to life quality and cardiovascular risk on medical students of a private university in Brazil. Methods: This study is based on a descriptive analysis of cross-sectional cohort of a sample of 490 students from the first to sixth year of medical school. The data were collected through an anonymous questionnaire. Results: Some of the data were: 81.6% of students reported alcohol ingestion, 5.9% are smokers and 13.9% reported use of illicit drugs, 27.9% informed adding salt to the food, 78.4% reported stress/anxiety. Conclusion: After observing all the collected data, a project was built for a longitudinal analysis of the influence of life style during the medical school years on mental and cardiovascular health, short and long term.

Key words: Medical students, health, cardiovascular risk, stress.

1. Introduction

According to the WHO (World Health Organization), "health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" [1]. Thus, this encompasses a range of concepts that are put at risk in health professionals, since graduation.

University students, in general, adopt a very unhealthy lifestyle. This becomes more evident when we assess their eating habits, physical activity, smoking, alcohol consumption, sleep quality and mental health [2, 3]. Limited data are available, especially regarding to medical students, and these unhealthy habits become more evident due to the stressful academic environment, long duration shifts

and graduation classes and could negatively impact on their academic performance [4].

Not only the great amount of time they spend studying, but also a lot of other limiting factors, like achieving better results, excess of information, full-time classes, lack of time to socialize and family concerns—all these together have the potential for enhancing mental disorders. Especially when medical students have their first contact with patients with serious diseases, and death, turning their life more stressful and also triggering depressive symptoms [2, 3]. Besides that, patient care is ultimately affected because decision-making ability depends on a stable mental health state [4].

Those factors beginning early in their lives influence in health, especially on cardiovascular health on this medical students' population, which can have a negative impact on cardiovascular risk in the future. However, there is a paucity of research

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exploring those aspects.

2. Aim

The authors sought to identify the profile factors related to life quality and cardiovascular risk on medical students of a private university located on the city of Rio de Janeiro, Brazil, as well as their evolution through the college years.

3. Material and Methods

3.1 Study Population

Descriptive analysis of a cross-sectional cohort study involves a sample of 490 eligible medical students, from Souza Marques Medical School, a private school of Rio de Janeiro, Brazil. The data have been collected between March and May 2017.

Participants replied to the questionnaire through an individual interview conducted by medical students from an academic league of cardiology. The survey was anonymous and administered through an individual self-report questionnaire completion form.

Students, from the first to sixth year of medical school, divided into basic cycle, clinical cycle and ending up on interns' cycle were asked about the prevalence of positive and negative habits and personal life events through their graduating years, using standardized questionnaires on habits and cardiovascular risk factors.

The questionnaire covered issues of daily habits, diet, sleeping hours, chronic-use medication, physical exercise as well as the use of licit and illicit drugs during their graduating medical school period.

All these data served as a basis to construct an instrument to evaluate the quality of life and the cardiovascular risk factors of the medical students through an observational, contemporary, controlled, individual and longitudinal study, comparing gender data on different years of academic graduating.

Studied variables: freshmen, second grade, third grade, fourth grade, fifth grade and undergraduate students. They were also separated between male and

female, as well as users and non-users of alcohol, tobacco and illicit drugs. Other variables included were: sleep routine, salt intake, psychological distress (stress /anxiety) and physical activity.

3.2 Statistical Analysis

Data analysis was performed using the analytical platform SPSS—Statistical Package for the Social Sciences, to implement all mediation necessary analysis techniques automatically and provide accurate descriptive analysis data. Categorical data were presented in percentages, while for quantitative data mean and standard deviation were used.

4. Results

This prospective cohort series consisted of 490 medical students, with the following characteristics: 84 (17.1%) were freshmen and has just initiated the school classes, 119 (24.3%) were on the second year of school, 100 (20.4%) were on the third year, 66 (13.5%) from the fourth year, 85 (17.3%) on the fifth year and 36 (7.3%) were interns, on the final year of graduation (Fig.1). The average age of the student cohort was 21.7 years (16-42 years old), and the majority were females (64.1%).

The questionnaire applied included data on socio-demographic conditions and knowledge of risk factors. Regarding the report of the presence of some factors, important data and the following percentages were found: 81.6% of students reported alcohol ingestion, 5.9% reported smoking, 13.9% reported illicit drug use, 92.5% informed to have 5 to 8 hours of sleep daily and 65.5% of them reported sleep period being reduced after admission on medical school.

Besides that, 27.9% informed excessive use of salt in food, 78.4% had a self-related stress/anxiety status, 75.1% said to be physical activity practitioners before starting the graduation but also 38.4% said that reduced the frequency when started medical school and had more sedentary lifestyle (Table 1).

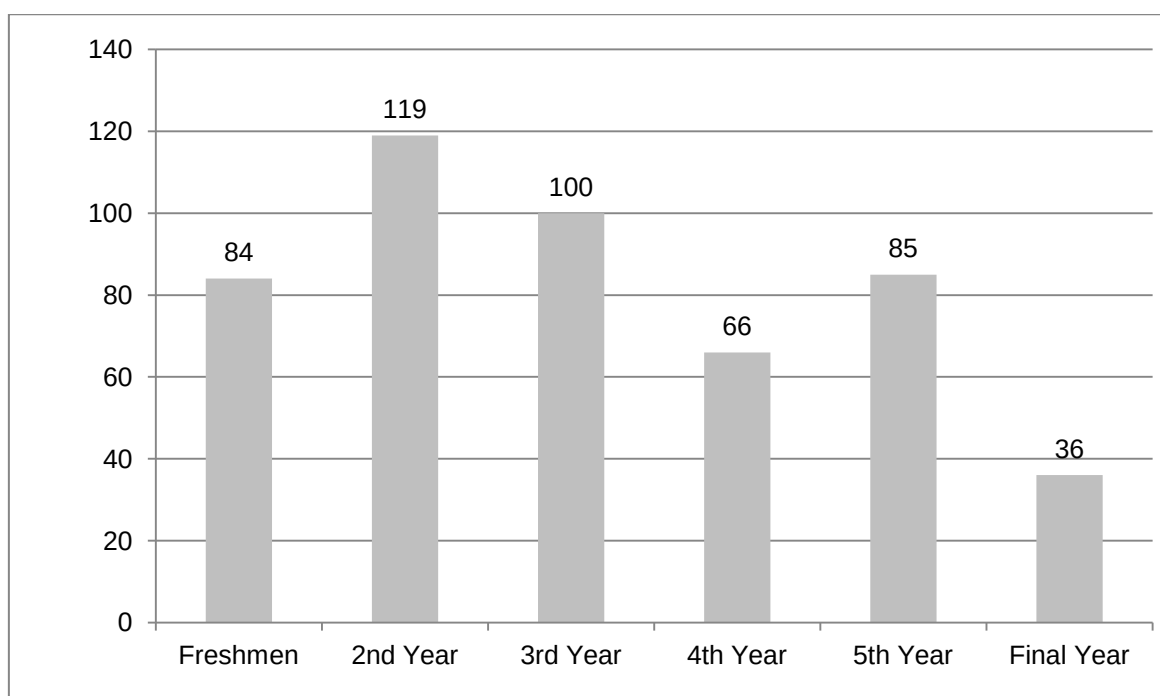


Fig. 1 Percentage of the study population separated by years in medical school.

Table 1 Percentage of affirmative responses on the questionnaire overall.

Question	%
Alcohol ingestion	81.6
Use of illicit drugs	13.9
Sleep reduction	65.5
Sleep 5 to 8 hours	92.5
Increase in stress/anxiety	78.4
Smoking habits	5.9
Add salt to food	27.9
Reduced physical activity	38.4

5. Discussion

Ramos-Dias et al. [5] analyzed students from the medical school of São José do Rio Preto, Brazil, and in the same way as our study found high levels of sedentary lifestyle among them (43.1%). In our research, 38.4% of the students reduced the frequency of physical activity when enrolled in medical school.

Despite the notion that the routine of medical schools is primarily linked to work-related stress and personal life events, the authors' findings suggested the difficulty of maintaining the routine of graduation classes with regular physical activity among medical students.

The study conducted by Figueiredo et al. [6] observed that the time spent (in minutes) for moderate and vigorous physical activities per day declined over the six years of medical graduation. However, this was not found in our study, since only 38.4% of the students reported having reduced their physical activity routine after they entered medical school. This requires a more thoroughly analysis since most of our study population is composed of students of first, second and third year of medical school. Though the last year students are underrepresented.

Corroborating the results found in our survey, other studies also found greater use of alcohol among medical students. Silva et al. [7] observed that alcohol

was the most used substance by medical students (84.7%), followed by illicit drugs (28.4%) and tobacco (22.8%). In addition, they assumed that religion is acting in a protective way against the drug use in the student's population evaluated [7].

Cardoso et al. [8] evaluated sleeping habits of a public university and identified sleep as a problem for quality of life. Students reported they slept on average less hours (6.13 hours) than the adult population in general (from seven to nine hours). In addition, some students have poor sleep quality, with excessive sleepiness in the diurnal period, with a strong correlation with the decrease in academic background. Mota et al. [9] carried out a research in the online databases and analyzed 31 studies where the medical students' quality of life was evaluated. In most cases excessive sleepiness and sleep deprivation were found.

In our survey 65.5% of students have decreased their sleeping hours pattern since they started college. This sleep reduction is positively correlated with the prevalence of obesity in different populations, which is an important marker of cardiovascular risk. In addition to that, sleep deprivation can decrease the students' performance during classes and their practical activities.

Meyer et al. [10] in Santa Catarina state in Brazil, surveyed medical students at public universities, and analyzed the occupational stress score. They found that the mean for total occupational stress (43.6%) is higher than the standard mean, indicating a high stress level on the students investigated. In our study, 78.4% reported stress, which is a much higher average than that found in the literature. Currently available information is insufficient to draw firm conclusions on the causes and consequences of student distress, although these results require a need for actions to minimize the negative effects of routine to the medical training process.

Aguiar et al. [11] analyzed stress symptoms in medical students of the Federal University of Ceará, in Brazil. They observed that 73.5% considered the medical school as a source of stress. The prevalence of

stress symptoms was 49.7% and women reported more stress symptoms than men (66.7% of women against 35.8% of men). In our study population, 78.4% referred stress and anxiety during the college years. According to these results, stress is one of the major negative factors that afflicts the quality of life and health of the medical graduate student.

Alves et al. [3] observed life quality of medical students through the application of Whoqol-bref questionnaire, comparing freshmen to interns (last year medical students), and concluded that there was a significative reduction of life quality during medical school, mainly in mental health (15.32% in female freshmen versus 14.2% in female interns). Although we did not evaluate the perception of life quality of the students in such a complex way, we realized that what we observed regarding the lack of sleeping hours and increase of stress is directly related to the decrease of life quality of these individuals.

Heinisch et al. [12] compared cardiovascular risk factors in students from different courses. They concluded that there is a higher prevalence of sedentarism and stress in medical students in relation to electrical engineering students, and a higher prevalence of alcohol consumption and stress in medical students in relation to economics scholars. This shows us that medical school can affect physical, mental and social health differently from other courses, thus negatively affecting the quality of life of these students. We found a high level of alcohol consumption (81.6%) and illicit drug use (13.9%) among students, which shows higher levels when compared with the literature.

The increasing consumption of alcohol and illicit drugs in young people is a topic that has been much discussed and raises concern. This fact is even more relevant when referring to medical students. Kerr-Corrêa et al. [13] compared the prevalence of the use of these substances at the Faculdade de Medicina de Botucatu, with eight other medical schools in São Paulo. There was no significant difference between them and the prevalence of drug use at Botucatu that

was as follows, with the variation among other schools shown in parentheses: alcohol 50% (42-50%); tobacco 7% (7-13%); solvents 8% (7-12%); 6% marijuana (6-16%); benzodiazepines (BZD) 3% (2-9%); cocaine 0.5% (0.2-4%); amphetamines 1% (0-1%).

Our study also questioned about the use of alcohol, tobacco and illicit drugs in general, without separating them by categories such as the study cited above. We found higher rates of alcohol consumption (81.6%) than their study, a slightly difference in smoking habits (5.9%) and 13.9% use illegal drugs.

In order to analyze the prevalence of alcohol and drug use among students, Tockus et al. [14] applied the questionnaire: ASSIST (alcohol, smoking and substance involvement screening test) to medical students at a private university in Brazil, and also found high rates of drug use, as 78% used alcoholic beverages, and among illicit drugs, 26.14% had already used cannabis sativa. This is another research that shows high statistical values of the use of these substances by students, corroborating with what we found in our analysis.

These results show that those substances are already widespread in universities. Due to this reality, universities should have as a priority the discussion of projects and solutions that could fight this problem. It is essential that medical students have a support network for this high prevalence to decrease, otherwise this can become a serious issue in the future, during their medical career.

6. Conclusions

After observing all the collected data from the population of medical students and comparing the first year/freshmen with other students on different levels of graduation over the years, our group had built a project for a longitudinal study that will analyze the lifestyle influence on cardiovascular and mental health, from short to long term between the years on medical school.

The progressive analysis of the data will identify the stressors, focusing on achieves to improve the

conditions of students' life, purposing strategies to reduce the most important risk factors that decreases students' health. Though our contributions and subsidies can guide policy health promotion and quality of life within the university itself, allowing the university managers implement devices to improve student's quality of life.

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