




Article

Assessment of Dietary Habits, Physical Activity and Lifestyle in Medical University Students

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Abstract: A busy schedule and demanding tasks challenge medical students to adjust their lifestyle and dietary habits. The aim of this study was to identify dietary habits and health-related behaviours among students. A number of 403 students (80.40% female, aged $M = 21.21 \pm 4.56$) enrolled in a medical university provided answers to a questionnaire constructed especially for this research, which was divided into three parts: the first part collected socio-demographic, anthropometric, and medical data; the second part inquired about dietary habits, lifestyle, sleep, physical activity, water intake, and use of alcohol and cigarettes; and the third part collected information about nutrition-related data and the consumption of fruit, vegetables, meat, eggs, fish, and sweets. Data were analysed using SPSS v24. Students usually slept $M = 6.71 \pm 1.52$ h/day, and one-third had self-imposed diet restrictions to control their weight. For both genders, the most important meal was lunch, and one-third of students had breakfast each morning. On average, the students consumed 1.64 ± 0.88 l of water per day and had 220 min of physical activity per week. Data about the consumption of fruit, vegetables, meat, eggs, fish, sweets, fast food, coffee, tea, alcohol, or carbohydrate drinks were presented. The results of our study proved that medical students have knowledge about how to maintain a healthy life and they practice it, which is important for their subsequent professional life.

Keywords: student; medical studies; dietary habits; sleep; physical activity; lifestyle; health; nutrition



Citation: Pop, L.-M.; Iorga, M.; Muraru, I.-D.; Petrariu, F.-D. Assessment of Dietary Habits, Physical Activity and Lifestyle in Medical University Students. *Sustainability* **2021**, *13*, 3572. <https://doi.org/10.3390/su13063572>

Academic Editor: Walery Zukow

Received: 21 February 2021

Accepted: 19 March 2021

Published: 23 March 2021

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1. Introduction

According to the *Behavioural Risk Factor Surveillance System* [1], there is a constant increase in overweight and obesity between the ages of 18 and 29. An unhealthy diet and a low level of physical activity during university years predispose students to future health issues [2]. Prevention of weight excess, obesity, and related diseases has become a worldwide challenge. Given the significant association between low diet quality and weight gain, researchers have focused on evaluating the association between the nutritional quality of dietary intake and the health outcomes [3]. Studies reported an inverse association between increased diet quality and chronic disease-specific mortality [4–6] such that a healthy lifestyle (having a balanced diet, regular physical activity, avoiding smoking and excessive alcohol consumption) has been shown to reduce the alarming overall mortality caused especially by non-communicable diseases [7,8].

In the context of a healthy lifestyle, nutrition plays an important role in the development of young people [9]. Eating behavioural patterns developed as adolescents and young adults influence long-term behaviour and have a great impact on adult life [10]. During their academic years, students experiment greater freedom of choice concerning their food choices, health-related behaviours, practicing sports, and shaping their own lifestyle. Consequently, the transition to a new living environment, with busy schedules,

unhealthy food offers, and the risk of skipping meals, is likely to change eating behaviours over time [11,12].

Weight is strongly related to eating behaviours. The years spent in the university are a critical period for weight gain [1]. It was found that, in general, students did not eat the recommended ratios of fruit and vegetables, with a significant decrease in the quantity of bread and vegetables consumed during the first year of university and significant increases in fat intake and alcohol consumption. An unhealthy diet and excessive alcohol consumption contribute significantly to the energy intake and, consequently, can facilitate the student's weight gain [13]. In a study by Racette et al. [14], it was shown that 50% of the 764 freshmen students reported having eaten high-fat or fast food three or more times during the previous week. Moreover, the study revealed that, by the end of their sophomore year, 70% of the 290 students who were reassessed had gained weight with no apparent association with exercise or dietary patterns. Students have a significantly higher total fat and saturated fat intake and a much lower intake of polyunsaturated fats, monounsaturated fats, folic acid, vitamin E, and grains [15] compared to the instructions of the American Heart Association [16]. Knowledge about the importance of physical activity, healthy eating habits, and nutrition was found to be the keys to a healthy lifestyle of young adults [17].

Medical students are supposed to practice healthier eating habits compared to non-medical students, but some studies have found contradictory results. A study by Ganasegeran et al. [18] revealed that medical students presented risk factors for early chronic disease due to their poor eating habits. Although medical students had sufficient knowledge of healthy eating habits, it was found that they failed to apply this knowledge into practice. Similar findings were presented by Haq et al. [19] and Williams et al. [20], who showed that medical students are more prone to have a Western dietary pattern (processed food with low levels of fat, sugar, and salt) and to practice less physical activity. Both research teams concluded that medical students adopted less healthy dietary patterns as compared to healthy dietary patterns.

Sleep-related problems and stress were also considered a problem among medical students. Studies showed that medical students have more sleep-related problems compared to non-medical students. For example, 70% of Hong Kong medical students self-reported sleep deprivation [21], 40.60% of Iranian students reported poor sleep quality [22], 28.2% of medical students in Brazil have insomnia [23], 69% of Lithuanian medical students reported good to excellent nocturnal sleep [24], 47.1% of medical students in India reported refreshing sleep [25], 31.5% of medical students suffered from sleep deprivation according to a study conducted in Nepal [26]. Palatty et al. [27] and Tafoya et al. [28] showed that the main factors which discriminate the medical students from their peers were academic loads, attitude towards study, and lifestyle.

Programs to prevent unhealthy eating habits among students are necessary to counteract a growing prevalence of overweight and obesity later in life [1]. Obesity is one of the most serious non-communicable diseases, classified as a chronic disease of a multifactorial origin and related to all ages. The development of dietary patterns, physical activity, and a healthy lifestyle, in general, in children and young people reduce the risk of developing obesity later in life. Dietary patterns seem to persist over the years, and thus academic years represent a crucial period for modelling a healthy lifestyle. [11]

The period of university studies represents, from the educator's perspective, the last opportunity to implement nutritional education among many students [29]. The diet of students from different countries is often classified as unhealthy, poor in fruit and vegetables, with irregular eating patterns and a high frequency of fast food choices, which is of particular concern because the eating habits established in this period of life can have a considerable effect on people's long-term health [30]. Moreover, behaviours adopted by students during their university education have the potential to make an additional impact on the community because young adults can play important roles in society (e.g., physicians, lawyers, health ministers, police officers), as well as being decision-makers and having sig-

nificant behaviour patterns and attitudes, and therefore the health and lifestyle behaviours of university students are of interest to public health [11]. Thus, strategies specifically designed to improve nutrition competence are needed, especially regarding information relating to sources of nutrition and healthy weight management [29].

Although it has been observed that students' food habits change over the years of study, the research has generally focused on physical education students or has been conducted on students in general. Very few studies have looked into eating habits and a healthy lifestyle among medical students, especially due to the fact that they are much more informed about the importance of a healthy diet, physical exercise, and the negative effects of consumption of various substances on physical and mental health. Of all the specialities, medical students should be the best-informed individuals and adopt a healthy lifestyle, which they can then promote in their professional careers. Given the fact that studies conducted on medical students are extremely limited, and most of them evaluate the impact of nutrition education in the university curriculum on changing eating behaviour [18–20], this study covers an important gap.

This study aimed to investigate the eating habits, nutrition patterns, and lifestyle of students enrolled in a medical university in the North-East of Romania and to assess health-related behaviours (physical activity, smoking, and alcohol consumption) considering gender and age.

2. Materials and Methods

2.1. Study Population

The study was conducted in April–May 2019 in a public medical university in Iasi, Romania. A total of 500 questionnaires were distributed online to medical students, all years of study. Students were informed about the purpose of the study and the confidentiality of data. No incentive was given to the participants. Additionally, they were informed that they could withdraw from the study whenever they wanted, without consequences. Questionnaires fully filled in and returned before the deadline were included for the analysis of data. The criteria for excluding questionnaires from the research were incomplete questionnaires or questionnaires submitted after the deadline. Finally, 403 questionnaires were included in the research. Figure 1 provides details on the response rate.

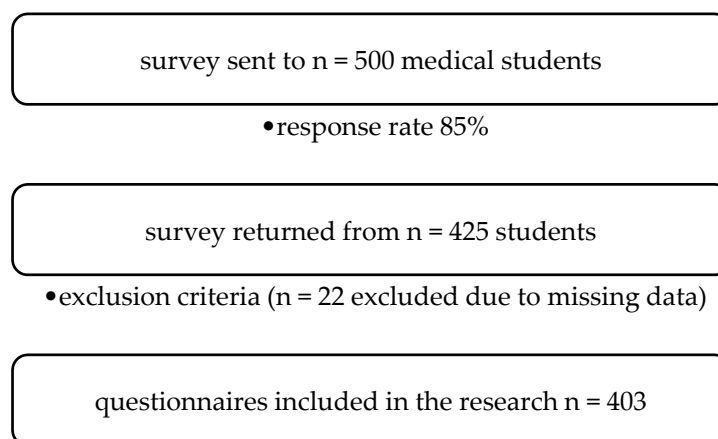


Figure 1. Study profile.

2.2. Data Collection

The questionnaire was specially created for this research, the items being formulated following an extensive research of the data and tools used in scientific articles and the congruence of results obtained from their use in different countries and applied to different populations. The questionnaire was created using Google Docs and was distributed online. The first part of the questionnaire gathered socio-demographic, anthropometric and medical self-reported information (such as age, gender, body weight, original envi-

ronment, year of study, and the presence of a chronic disease). The second part of the survey inquired about dietary habits (breakfast, lunch dinner, diets, the number of snacks, eating before night sleep or the time from wake up to the first meal, etc.); sleep (number of hours and naps); engagement in physical activity (quantity and frequency); coffee, tea, carbonated drinks, and water intake (quantity and frequency); and the consumption of alcohol and cigarettes. The third part collected information about the consumption of fruit, vegetables, meat, eggs, fish, sweets, and fast food.

2.3. Statistical Analysis

All analyses were performed using *IBM SPSS Statistics for Windows, version 23*. Results for descriptive statistics were expressed as means and standard deviations (SD). Body Mass Index (BMI) was computed from self-reported weight and height (kg/m^2). The BMI calculation was carried out according to World Health Organisation (WHO) guidelines, using standards for the European population: a BMI $< 18.5 \text{ kg}/\text{m}^2$ was categorised as underweight, $18.5\text{--}24.9 \text{ kg}/\text{m}^2$ as normal weight, $25.0\text{--}29.9 \text{ kg}/\text{m}^2$ as pre-obese, $30\text{--}34.9 \text{ kg}/\text{m}^2$ as obese class I, $35.0\text{--}39.9 \text{ kg}/\text{m}^2$ as obese class II, and $\geq 40 \text{ kg}/\text{m}^2$ as obese class III [31]. The normality of data distribution was tested using the Kolmogorov–Smirnov test. Given the fact that all data are not normally distributed, a bivariate analysis was performed and non-parametric tests were applied. The Spearman correlation was used to test the relationship between variables (such as age; weight; BMI; number of cigarettes smoked per day; consumption of fruit, fast food, eggs, and meat; number of hours of sleep per night; serving breakfast, lunch, dinner, and snacks). The Mann–Whitney test was used to identify differences depending on clinical/preclinical years of study and smoking/non-smoking status. A p -value < 0.05 was considered statistically significant.

2.4. Ethical Approval

The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by Centre de Reussite Universitaire, under the coordination of University of Medicine and Pharmacy and Agence Universitaire pour la Francophonie (AUF) (A5/AUF-ECO-233, approved 04.03.2014.) being part of a larger research grant entitled „Étude sur la vie des étudiants—comportement alimentaire, hygiène et style de vie” supported by Centre de Réussite Universitaire—“Grigore T. Popa” University of Medicine and Pharmacy of Iași and Agence Universitaire de la Francophonie, Romania.

3. Results

3.1. Socio-Demographic, Anthropometric, and Medical Data

Most students were female (80.40%, $N = 324$). More than half of the students come from urban areas (64.02%, $N = 258$). The mean age of the students participating in the study was $M = 21.21 \pm 4.56$. A total of 349 (86.6%) of them were Christian Orthodox.

Most of the students were happy with their weight at the time (58.31%, $N = 235$). Respondents had to declare if they suffered from chronic diseases, most of them stating they were in good health (88.20%, $N = 365$). A small number of them ($N = 38$, 9.20%) mentioned being previously diagnosed with gastritis ($N = 6$, 1.40%), hypothyroidism ($N = 5$, 1.20%), anaemia ($N = 4$, 10%), high blood pressure ($N = 3$, 0.70%), seborrheic dermatitis ($N = 2$, 0.50%), scoliosis ($N = 2$, 0.50%), bronchial asthma ($N = 2$, 0.50%), and autoimmune thyroiditis ($N = 20$, 5%). Additionally, we registered one respondent (0.2%) for each of the following disease: gluten allergy, discopathy, renal dysfunction, endocrinological diseases, type 1 diabetes, arthropathy, and hernia. Detailed data are presented in Table 1.

Table 1. Anthropometric data. Comparative data by gender.

	Men	Women	Total
Weight (kg)	M = 76.67 ± 12.79	M = 57.48 ± 8.94	M = 61.25 ± 12.41
BMI *	M = 23.35 ± 3.44	M = 20.90 ± 2.77	M = 21.38 ± 3.07
Underweight *	6.30% (N = 5)	16.70% (N = 54)	14.54% (N = 59)
Normal weight	64.60% (N = 51)	74.70% (N = 242)	72.70% (N = 293)
Overweight	24.10% (N = 19)	8.30% (N = 27)	11.41% (N = 46)
Obesity class I	5.10% (N = 4)	0.30% (N = 1)	1.24% (N = 5)

Data were presented as mean ± SD or *n* (%). * According to Diagnostic and Statistical Manual of Mental Disorders (DSM)-V [32], a body mass index less than or equal to 17.5 kg/m² is considered as a diagnostic criterion for anorexia nervosa.

3.2. Consumption of Alcohol and Cigarettes

Most students (69.40%, *N* = 279) were non-smokers. Daily smokers, who represent 16.67% (*N* = 67) have an M = 7.77 ± 6.38 consumption of cigarettes per day.

Almost half of the students drank alcohol occasionally (49.63%, *N* = 200), and more than one-third of respondents declared they were abstinent (34.74%, *N* = 140).

3.3. Physical Activity

Students had an average of 3.21 ± 2.71 h per week of practicing physical activity, and 18.36% of them (*N* = 74) were practicing daily. Students declared that they practiced jogging (22.65%, *N* = 82), going for walks (19.61%, *N* = 71), going to the gym (11.60%, *N* = 42), cycling (11.60%, *N* = 42), brisk walking (6.50%, *N* = 27), dancing (6.35%, *N* = 23), swimming (3.60%, *N* = 15), tennis (3.59%, *N* = 13), and soccer (3.59%, *N* = 13). A total of 12.16% of women (*N* = 49) and 2.48% of men (*N* = 10) declared they did not like to be engaged in physical activities. We also found that one-third of respondents (*N* = 130, 31.40%) walked daily to school or downtown and the rest of them usually preferred to use local transport.

3.4. Sleep-Related Data

A series of successive items tackled sleeping habits, quality, and sleep duration. The mean hours of sleep declared by the whole group of subjects was M = 6.71 ± 1.52, with no significant gender differences. One-quarter of the students (28.78%, *N* = 116) mentioned that they usually slept during the afternoon if they had the chance.

3.5. Dietary Habits and Lifestyle

3.5.1. Diets

Of all participants who answered the questionnaire, 141 (34.98%) mentioned that they followed diets to lose weight. The results showed that female students resorted to diets (30.52%, *N* = 123) more often than male students (4.47%, *N* = 18). The most frequent numbers of kilograms lost by students following diets were 5 kg (6%, *N* = 25), 10 kg (5.30%, *N* = 22), 4 kg (3.10%, *N* = 13), 3 kg (2.70%, *N* = 11), 8 kg (2.40%, *N* = 10), and 6 kg (2.20%, *N* = 9). More than a quarter of the participants (33.33%, *N* = 134) complied with religious fasts, with women (28.36%, *N* = 114) complying more strictly than men (4.98%, *N* = 20).

The students were asked if they were deliberate in their choices of food products and ways to consume them, and more than half of the participants (53.10%, *N* = 214) disclosed that they carefully selected food products. A higher percentage of women were more careful about food products (44.91%, *N* = 181) than men (8.19%, *N* = 33).

3.5.2. Regular Meals and Snacks

Respecting meals is especially important for physical health. Statistical analysis showed that more than half of the subjects had only two main meals a day (52.90%, *N* = 219) and a smaller number of them had only one main meal a day (10.60%, *N* = 44). A total of 81.89% (*N* = 330) of the students did not eat at regular time intervals. Breakfast is considered the most important meal of the day, and one-third of students ate breakfast

each morning (29.28%, $N = 118$), while 8.68% ($N = 35$) of students did not have breakfast at all. Half of the students (56.82%, $N = 229$) succeeded in having lunch daily. As for supper, the results were as above, but we noted that a larger number of students had this meal every day of the week (61.79%, $N = 249$), and equal percentages of students had supper twice or three times a week (3.97%, $N = 16$).

It appeared that the most important meal of the day for both male and female students was lunch (14.14%, $N = 57$ for male students and 47.15%, $N = 190$ for female students). Breakfast came in second for male students (3.47%, $N = 14$), while supper came in second for female students (20.60%, $N = 83$).

We found that most students (91.07%, $N = 367$) had snacks between the main meals, and almost one-third (29.03%, $N = 117$) declared that they ate late at night. However, the mean numbers of hours before bedtime when the last meal is eaten was $M = 2.94 \pm 2.19$ for the whole group.

3.6. Food Consumption

The subjects were asked to estimate the consumption of foods in each food group presented in the Food Pyramid: cereals, fruits, vegetables, dairy products, meat, eggs, sweets, and fast food [33].

Cereals—More than half of students eat cereals daily (52.61%, $N = 212$). A small number of students (4.71%, $N = 19$) declared that they did not eat cereals.

Table 2 below shows the consumption frequency of certain food categories, such as fruits, meat, and dairy, during a week. Regarding the frequency of vegetable consumption, less than half of the students (45.7%, $N = 189$) stated that they consume vegetables daily. The graphic representation of consumption of fruits, meat, and dairy products are presented in Figure 2.

Table 2. Fruit, meat, and dairy products.

Food Item	Frequency (M \pm SD) *	Total (N = 403)
Fruits	2.13 \pm 0.90	Daily—31.2% ($n = 129$) 3–4 times/week—37.9% ($n = 157$) twice a week—25.1% ($n = 104$) no consumption—3.1% ($n = 13$)
Meat	4.72 \pm 2.32	daily—30.1% ($n = 125$) 3–4 times/week—35.8% ($n = 148$) twice a week—25.4% ($n = 105$) no consumption—6% ($n = 25$)
Dairy	2.16 \pm 0.89	daily—28.5% ($n = 118$) 3–4 times/week—36.2% ($n = 150$) twice a week—28.5% ($n = 118$) no consumption—4.1% ($n = 17$)

* Means (M) and standard deviations (SD).

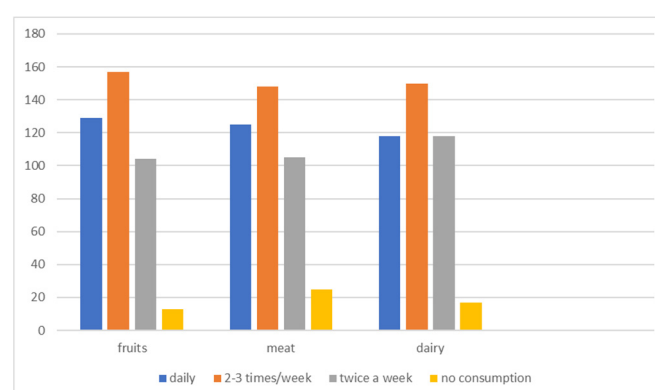


Figure 2. Consumption of fruits, meat, and dairy products.

Fruits—Most students seemed to prefer eating apples (63.68%, $N = 256$); one-quarter of them did not eat any seed fruit (25.12%, $N = 101$). More than one-third of respondents (39.80%, $N = 160$) did not consume any subtropical fruit, while those who were consuming fruit declared they preferred to eat oranges (35.82%). In terms of tropical fruit, one-third of the students (31.09%, $N = 125$) did not eat any fruit in this category, and 61.19% ($N = 248$) preferred bananas from subtropical fruit. The fruit was consumed in various ways: raw, fresh, peeled, or unpeeled, and as various beverages, such as juices or shakes. Nonetheless, most students preferred raw, unpeeled fruit (72.21%, $N = 291$) or peeled fruit (62.28%, $N = 251$).

Vegetables—The most consumed vegetables were cucumbers (38.71%, $N = 156$), tomatoes (48.14%, $N = 194$), peppers (21.84%, $N = 88$), green beans (10.42%, $N = 42$), carrots (35.73%, $N = 144$), potatoes (36.23%, $N = 146$), cabbage (8.44%, $N = 34$), and broccoli (7.69%, $N = 31$).

Dairy products—Students consumed various dairy products: many types of yogurts (16.15%, $N = 63$), various types of fresh cheese or cheese as part of various dishes (18.72%, $N = 73$), as well as milk (26.92%, $N = 105$). Most subjects (38.21%, $N = 149$) declared that they consumed all these types of dairy products. A small number (4.22%, $N = 17$) mentioned that they did not eat dairy products.

Meat—The types of meat students consumed most often were poultry (chicken, turkey, etc.)—90.30%, fish—87.20%, and pork—36%. In addition, most students consumed the meat roasted (67.10%), fried (55.60%), or boiled (45.40%).

Eggs—medical students consumed 3.21 ± 2.78 eggs per week. Most frequently they boiled the eggs (67.10%) or fried them (56%); a small percentage (7.50%, $N = 31$) did not consume eggs.

Fish—Many of subjects stated that they consumed fish once (20.50%, $N = 85$), twice (23.40%, $N = 97$), or three times (16.20%, $N = 67$) per month. Some of them mentioned they did not eat fish at all (9.70%, $N = 40$). Most students preferred tuna (57.70%), most likely canned, and various types of oily fish such as carp (27.80%), salmon (34.10%), or mackerel (32.40%). Most of them preferred to eat the fish fried (53.10%), grilled (44.70%), or canned (45.40%).

Sweets—More than half of the students (66%, $N = 226$) declared that they ate sweet products, with an inclination towards chocolate (81.40%), candies (40.60%), and cakes (44.90%).

Fast food—A large majority of medical students consumed fast food (82.38%, $N = 332$). Approximately half of the students ate fast food only once a week (47.56%, $N = 185$), while others ate it twice (18.25%, $N = 71$), three times (12.08%, $N = 47$), four times a week (7.46%, $N = 29$), and not at all or rarely (11.31%, $N = 44$). Among the favourites, students mentioned pizza (50.56%, $N = 180$), shawarma (14.61%, $N = 52$), hamburgers (11.80%, $N = 42$), fries (3.37%, $N = 12$), sandwiches (1.37%, $N = 12$), and crispy strips (1.97%, $N = 7$).

Positive correlations were identified between participants' age and the number of sleeping hours ($r = 0.135$ and $r = 0.007$, respectively) and the number of eggs they ate in a week ($r = 0.214$; $p < 0.001$), meaning that, as students aged, they slept more and tended to eat larger quantities of eggs. Furthermore, students who had more main meals also tended to consume more eggs ($r = 0.132$; $p = 0.008$).

3.7. Liquid Intake: Water, Tea, Coffee, Carbonated Drinks

On average, students consumed 1.64 ± 0.88 litres of water per day. During classes, more than half of them hydrated themselves properly (58.85%, $N = 236$), while a quarter of them (29.68%, $N = 119$) rarely drank water during the hours they spent at the faculty. Almost half of the students drank coffee daily (44.42%, $N = 179$), and a quarter of them did not drink coffee at all (25.31%, $N = 102$); also, we found that 18.45% ($N = 74$) preferred tea for daily consumption.

Carbonated drinks were consumed occasionally by over one-third of the students (40.69%, $N = 164$), and a quarter of them did not consume them at all (21.84%, $N = 88$). A low percentage of students (8.93%, $N = 36$) declared that they consumed carbonated drinks daily.

Comparative results are presented in Table 3. Men had lunch more often than women and women exercised less than men. Moreover, men ate more meat, eggs, and fast food compared to women. Regarding students' water intake throughout the day, women were more prone to drink a smaller quantity of water and less frequently compared to men.

Table 3. Comparative analysis between variables considering gender *.

Variable	Males *	Females *	Total *	t	df	p-Value	95% CI
Age (years)	21.16 (±4.14)	21.22 (±4.66)	21.21 (±4.56)	−0.10	401	0.916	−1.18–1.06
Main meals/day	2.37 (±0.83)	2.23 (±0.63)	2.26 (±0.68)	1.47	101.22	0.144	−0.05–0.34
Breakfast/week	4.13 (±2.47)	4.15 (±2.27)	4.14 (±2.31)	−0.04	401	0.967	−0.58–0.55
Lunch/week	6.00 (±1.70)	5.44 (±2.00)	5.55 (±1.95)	2.52	135.82	0.013	0.12–0.99
Dinner/week	5.96 (±1.78)	5.81 (±1.80)	5.84 (±1.79)	0.63	401	0.524	−0.30–0.58
Snacks/day	1.10 (±0.03)	1.08 (±0.28)	2.49 (±1.43)	0.41	401	0.679	−0.05–0.08
Eating before sleep (h)	2.94 (±2.81)	2.93 (±2.02)	2.94 (±2.19)	0.03	98.43	0.976	−0.65–0.67
Eating after getting up (h)	3.15 (±2.20)	2.46 (±1.73)	2.58 (±1.83)	2.14	221	0.033	0.55–1.31
Fruit/day	2.25 (±1.83)	1.98 (±1.11)	2.03 (±1.28)	1.24	92.38	0.216	−0.15–0.69
Meat/week	6.02 (±2.79)	4.41 (±2.08)	4.72 (±2.32)	5.73	401	0.000	1.05–2.16
Eggs/week	4.79 (±4.56)	2.83 (±1.95)	3.21 (±2.78)	3.74	85.11	0.000	0.92–3.01
Fish/month	3.08 (±3.27)	2.85 (±2.38)	2.90 (±2.57)	0.72	401	0.471	−0.40–0.86
Fast food/week	2.14 (±1.63)	1.56 (±1.20)	1.68 (±1.31)	2.89	97.17	0.005	0.18–0.96
Water/day (litres)	2.05 (±0.97)	1.53 (±0.82)	1.63 (±0.88)	4.83	400	0.000	0.28–0.75
Exercise (hours/day)	4.07 (±3.22)	2.99 (±2.52)	3.21 (±2.71)	2.06	91.97	0.011	0.25–1.90

* Means (M) and standard deviations (SD).

We found that smokers were more prone to consume less healthy food and to have unhealthy eating habits. Results of the Mann–Whitney test showed that there were significant differences depending on the status of smoker/non-smoker in terms of fast-food consumption ($z = -3.800$, $p < 0.001$) and frequency of eating breakfast per week ($z = -4.640$, $p < 0.001$), which meant that smokers ate more fast food (Mdn1 = 2) and had a lower frequency of eating breakfast per week (Mdn1 = 3) than non-smoker students (Mdn2 = 1 and Mdn2 = 5, respectively). Significant differences were also recorded in terms of fruit consumption per week ($z = -2.318$, $p = 0.020$), meaning that non-smoker students (Mdn2 = 2) tended to eat less fruit per week than smokers (Mdn1 = 3). The number of night sleeping hours was different ($z = -2.306$, $p = 0.021$)—non-smokers (Mdn2 = 7) had more hours of sleep than smokers (Mdn1 = 6).

Comparative analysis between preclinical (I–III) and clinical (IV–VI) years of study showed that there was a significant difference in terms of sleeping hours ($z = -2.382$, $p = 0.017$), which showed that students in preclinical years (Mdn1 = 5) slept less than students in clinical years (Mdn2 = 7). There were also significant differences regarding the frequency of eating vegetables daily ($z = -2.748$, $p = 0.006$), which means that students in the first three years of college tended to have a higher frequency of eating vegetables daily (Mdn1 = 2) than students from last three years of college (Mdn2 = 1).

A positive correlation was identified between age and weight and age and BMI, meaning that, as students aged, their weight and BMI increased. The more students slept per night, the less fast food they consumed. Detailed results are presented in Table 4.

Table 4. Correlation results.

Variable	Age	BMI	Hours of Sleeping	No. of Meals	Fast Food Consumption
Age	1	0.244 **, 0.000	0.072, 0.150	−0.048, 0.334	−0.151 **, 0.003
BMI	0.244 **, 0.000	1	−0.006, 0.905	−0.043, 0.390	−0.061, 0.232
Hours of sleeping	0.072, 0.150	−0.006, 0.905	1	0.125 *, 0.012	−0.140 **, 0.006
No. of meals	−0.048, 0.334	−0.043, 0.390	0.125 *, 0.012	1	−0.194 **, 0.000
Fast food consumption	−0.151 **, 0.003	−0.061, 0.232	−0.140 **, 0.006	−0.194 **, 0.000	1

** Correlation is significant at the 0.01 level (two-tailed) * Correlation is significant at the 0.05 level (two-tailed).

4. Discussion

A total of 324 women and 79 men participated in this study. This distribution is normal for medical universities, where the percentage of female students is overwhelmingly higher. According to the Medical School Council [34], women outnumber men in most medical schools in the USA and Eastern and Western Europe by about 3:2 [35,36].

During the academic years, the transition to another environment is likely to change subjects' eating patterns [11]. There are many factors that were found to affect these behaviours: stress, economic status, dietary habits related to their family of origin, the cost of food, the knowledge about healthy food, the time of food preparation, culture, etc. In the case of medical students, these factors can even be multiplied: busy schedule, skipping lunches, early wakeups with no breakfasts, long practical sessions, etc., considering the lives of many students. Our results showed that, compared to the general population and the nonmedical students, the medical student population is more prone to eat healthier, to have more knowledge about nutrition, and to carefully select their food products; moreover, they are more prone to give up unhealthy behaviours such as drinking alcohol or smoking cigarettes and are more engaged in physical activity [37–41].

Therefore, it is useful to know about food choices and preferences, as well as factors that influence students' eating habits to provide effective education and nutritional care by promoting healthy eating, a high-fibre diet, whole grains, dairy products, and low-calorie foods [42,43]. There is a growing demand for global health strategies that would encourage body image and healthy figure among youth, initiatives that should mobilise society at national and international levels [42]. The results of our study prove that medical students have knowledge about how to maintain a healthy life and they practice it, which is important for their subsequent professional life.

In this study, we examined the eating habits of medical students and assessed their health-related behaviours; the university population is considered a suitable sample for the study of health in young adults [44].

The results of this research showed that about three-quarters of the students (72.70%) had a normal BMI without significant differences according to gender; 14.54% were underweight and 11.41% were overweight. This fact is in congruency with the results of a study conducted on 734 students in Italy, which indicated that a large part of the sample had normal weight (80.9% in women and 71.70% in men), while 13.5% of women and 28.30% of men were overweight or obese [45]. At the same time, these results are in opposition to the findings of a study conducted by Mahfouz et al. [46], who showed that only 45% of students had normal weight, 21% were underweight, and 34% overweight. Moreover, this study found a significant difference in the weight status of males and females; men were more likely to be obese and women were more likely to be underweight.

More than half of the students included in our study were satisfied with their body weight (58.31%), and most of them stated they were in good health (88.20%). These results are somewhat in line with the results of Piko [47], who showed that more than half of the students (61% of men and 66.30% of women) considered that they were in good health. In general, most students (78.6%, $N = 1667$) rated their health as "good" or "very good", as indicated by the results of a study conducted by Bickerdike et al. [48]. Zaccagni et al. [45] identified that students (both men and women) had a significant preference for thinner bodies; women were especially more dissatisfied with body weight than men.

Sleep is part of a daily biological rhythm and is indispensable for health promotion [49]. Our results showed that the average number of hours of sleep among students was $M = 6.71 \pm 0.88$, which is consistent with the results of Band and Lee [50]. The authors found that the average sleep duration of the respondents was 6.7 ± 1.3 h. A recent study also indicated that the majority of students 79.3% ($n = 1215$) did not reach the minimum number of 8 h of sleep per night during the week [48]. Obviously, students fail to meet the current recommendations of *The American Academy of Sleep Medicine* (AASM) and *Sleep Research Society* (SRS). The two societies agreed that adults should sleep 7 h a night or even longer, with sleeping less than 7 h a night being associated with adverse health

outcomes [51]. Given the medical profession of the future students, it is important for them to know that pathological drowsiness has been significantly associated with a higher prevalence of burning syndrome, and quantitatively inadequate sleep has been correlated with a significantly lower professional effectiveness and higher exhaustion scores [52]. The results showed no statistical gender differences regarding the number of hours for night sleep.

Almost one-third students in our study (28.78%) reported that they usually slept during the afternoon if they had the chance. A study by Vela-Bueno et al. [53] showed that having a nap is a common habit among Spanish university students, a habit that can be explained by the fact that a large proportion of first-year students follow irregular sleep patterns, which can lead to insufficient sleep; thus, to compensate, they often have long naps, which are less effective than short naps in improving subjective alertness and cognitive performance [54]. Having naps is a healthy behaviour during academic years. Naps may enhance certain cognitive and performance tasks, whereas intervening naps of 60 or 90 min halted the deterioration in the performance of a visual perception task that occurred during the day, but further studies are needed [55].

Regarding the frequency of meals, the results from the present study indicated that more than half of the students had two main meals per day. These results are in congruency with another study which showed that most students (52.70%) ate two meals per day [56]. Moreover, many students in our study (81.89%) reported that they did not have meals at regular time intervals. These results are opposite to the results from a study conducted in China, which stated that most students (83.60%) ate regularly [29]. Of great concern is the fact that only 29.28% of the students in our study ate breakfast daily, twice (13.90%) or three times (19.60%) over a week, while 8.68% did not eat breakfast at all. These results are in opposition to those obtained by Gan and Yeoh [57], who reported that about 62.20% of the female students consumed breakfast daily or four to six days weekly in the past seven days.

Our results stated that most students (91.07%) ate an average of 2.49 ± 1.43 snacks per day. Some authors reported a lower consumption of snacks. For example, Al-Rethaiaa et al. [58] showed that only 31.7% of students self-reported eating snacks. Furthermore, Papier et al. [59] identified that individuals tended to increase their intake of high-calorie or high-fat snacks when they felt stressed, while other studies reported that individuals ate less of all food in stressful conditions, like academic years.

Approximately one-third of students were found to have a healthy diet. More than half of the students (52.61%) ate cereals daily, 32.01% ate fruits daily, and 29.28% ate dairy every day. These results are somehow similar to another study conducted by Otemuyiwa and Adewusi [60], which indicated that 60% of the students consumed the recommended minimum number of cereal servings. Conversely, this study found that more female students (40%) consumed adequate quantities of fruit and vegetables than their male counterparts (20%), while the consumption of milk and milk substitutes was low (10% male and 25% female).

Frequent consumption of unhealthy items is common among students from our study, given that 66% of them ate sweets (consisting of chocolate, candy, or cakes) daily. These results are not vastly different from the results of a study conducted in Lebanon, which stated that 42.60% of participants consumed sweets every day (cake, ice cream, chocolate, etc.) [61]. Moreover, most students from our study (82.38%) claimed they consume fast food (generally meaning pizza, shawarma, hamburgers, or fries). Half of these students (47.56%) consumed fast food once a week. The results obtained by Salameh et al. [61] had higher rates, showing that more than half of the participants (58.70%) ate fast-food less than two times a week, and 12.40% of students ate fast-food every day.

Water is essential for surviving. The WHO recommends a minimum intake of water equal to 2.2 L/day for females and 2.5 L/day for males, depending on body size, in average conditions. Physical activity and high temperature increase this need to 4.5 litres per day for both men and women [62]. From this point of view, students in our study did not meet the

recommendation criteria; our results showed that they drank, on average, one and a half litre of water a day, and most than half of them (58.85%) hydrated properly during classes. There are few studies in the literature regarding water consumption among students. It was found that college students tended to choose their drinking beverages on the basis of their cost, as well as taste factors, rather than the nutritional information associated with a particular drink, which suggests that college students may be particularly at risk due to their lack of sufficient water intake, as well as a lack of understanding regarding the need to adhere to guidelines related to daily water intake [63,64]. A high rate was identified by Teng et al. [65], who showed that plain water was the most consumed beverage (92.30% of the participants).

The findings of this study must be analysed in the context of the specific medical university. All students are very mobile during the day, having theoretical and practical sessions on the university campus but also in the university hospitals. Stressful activity, demanding tasks, working in medical clinics, short breaks, or early classes all influence students' access to healthy food and regular meals, and decrease the practice of healthy habits.

Excessive alcohol consumption among students is a widespread problem on several university campuses, being associated with other unhealthy behaviours such as smoking, risky sexual behaviours, contact with multiple sexual partners, and non-use of the car seat belt [66]. The results of our study showed that half of the students (49.63%) drink alcohol occasionally and 34.74% of the participants do not drink alcohol. We can conclude that medical students drink less alcohol compared to a similar age population [67].

Regarding coffee consumption, the results of our study showed that close to half of the students (44.42%) drink coffee every day. Results from other studies showed that consumers aged 18 to 24 are the lightest coffee imbibers, with 2.5 cups per day, while the heaviest coffee consumers in the USA are those aged 40–59, with an average of about 4 cups per day [68]. Thus, we can conclude that medical students drink less coffee than the normal population.

In a literature review of Smith and Leggat [69], the authors highlighted that the international prevalence of tobacco smoking among medical students varied from 2 to 58%. Stress during college may be a contributing factor to smoking initiation. Our study revealed that most of the students did not smoke at all (69.40%), and only 16.67% of them were current smokers who consumed, on average, 7.77 ± 6.38 cigarettes in a day. These results are like those identified by other studies on medical students such as El Ansari et al. [70], Zarobkiewicz et al. [71], or Niu et al. [72]. Some other studies showed that about a quarter of all U.S. students smoked [73], and 75% of them continued to smoke in adulthood [74], placing future adults at greater risk of developing lung cancer and cardiovascular disease. Similar trends were observed among students in Europe [8,75]. Considering these results, we can conclude that medical students tend to smoke less than students from nonmedical studies or adult from the general population.

Current recommendations state that adults should be engaged in aerobic physical activity for at least 150 min/week of moderate intensity or 75 min/week of vigorous intensity, or an equivalent combination [76,77]. We found that medical students were engaged in activities such as jogging, going for walks, going to the gym, or cycling and had an average of 221 min per week, meaning that students from medical studies reported higher levels of physical activity and met these recommendations. A relatively important percentage of students in our study did not exercise at all (14.64%), and in general, female medical students were engaged in physical activity less than male students. These findings are not similar to other results found in the literature. Studies proved that, in general, the level of physical activity of students is worrying since approximately 30% to 50% of respondents did not participate in adequate amounts of physical activity. When considering gender, studies found that male college students who participated in more vigorous activities than females tended to prefer team sports or weightlifting, while women were interested in yoga, dance, or aerobics [37,42,78,79].

It has been noticed that studying medicine and its related branches, as well as the accumulation of new knowledge, have a great impact on students' eating practices. Thus, they internalise the information they gather, and our results showed that some self-destructive behaviours, such as smoking, decrease during university studies. [39,71,72] Smoking decreased from the first to the sixth year of medical studies, and regarding physical activity, scores were significantly higher for first-year students compared to sixth year's students, suggesting that older students had a more sedentary lifestyle [39,40,80]. The relationship between physical activity, sleep quality, and health-related quality-of-life was pointed out also by Izawa et al. [81,82]. A literature review of Blandon et al. [83] showed that nursing students are more prone to improve their healthy habits than other non-medical students (practicing healthier behaviours, avoiding toxic intakes and risky sexual relationships). The formation of students throughout the nursing degree improves their health-related habits. Similar findings were identified by Rizo-Baeza in health sciences students who showed also that the levels of overweight and obesity among students is less than that of the general population [84] and Can et al. [85] in nursing students—both studies proved more positive health-promoting lifestyles than those of non-medical students.

4.1. Reflections and Planning

The results of the present research proved that medical students drink alcohol and smoke cigarettes less than the normal population. On the other hand, some unhealthy behaviours such as less physical activity, skipping meals, or consumption of unhealthy food must encourage teaching and counselling staff to adopt more diversified and efficient strategies for helping medical students to develop a healthy lifestyle: developing programs about health nutrition and food to freshmen students (the most vulnerable population of students), providing access to healthy food on campus, rescheduling the sessions during semesters to facilitate breakfasts and lunches, encouraging physical activity through sports competitions, providing free snacks (fruit and vegetables), and organising cultural events to promote specific foods and to encourage students to connect to healthy dietary patterns from different cultures.

The present study did not focus on the differences regarding the impact of nutrition knowledge on students, comparing participants from different medical specialties or different years of study. Depending on their speciality, the university curricula offers courses related to nutrition or dietetics in different years of study. Further studies should focus on measuring the effect of nutrition knowledge on the dietary habits of medical students.

4.2. Strengths and Limitations of the Study

In the present research, a statistically significant number of participants was included, which is why we consider the present results to be important, representing a starting point for studying health-related behaviours and subsequent intervention programs within the Romanian medical student population. The second strength of the study is due to its comparative analysis, providing data for both male and female students. The third strength is related to a complex presentation of the dietary habits, providing information about food consumption according to the Food Pyramid (fruit, vegetables, cereals, eggs, meat and fish, dietary products, sweets, and fast food) and the consumption of alcohol, water, carbonated drinks, cigarettes, tea, and coffee. Moreover, adding information about the frequency of meals, diets and fasts, sleep-related data, and physical activity, the results of the present research offer a clearer image about medical student dietary habits and lifestyle, improving the data from the literature.

One important limitation of the study is represented by its cross-sectional design. Furthermore, gender differences must be interpreted with caution, given the lower number of male participants. Another limitation of the study is related to the comparative analysis considering a year of study as a variable. A future study must focus on identifying the difference between students in initial courses and students in advanced courses due to the reasonable evidence that showed a relationship between healthy habits and educational

level. Third, the respondents came from a single medical university, but this apparent limitation is not conclusive, given the fact that the investigated population came from one-third of the country, thus covering a considerable area; they are coming from different regions, both rural and urban areas and they have diverse food habits. Rizo-Baeza et al. [83] showed also that the levels of overweight and obesity among students is less than that of the general population.

5. Conclusions

Medical students have knowledge about how to maintain a healthy life and they put it into practice, which is important for their subsequent professional life as promoters of healthy physical and psychological health. Some changes in dietary habits, physical activity, and lifestyle are related to the busy schedule and long practical stages. That is why the university campus should increase the number of facilities in order to maintain a healthy life among medical students and to fulfil the need for a healthcare environment at higher educational institutions.

Author Contributions: Conceptualisation, L.-M.P. and M.I.; methodology, M.I. and L.-M.P.; formal analysis, L.-M.P., M.I. and I.-D.M.; investigation, L.-M.P.; resources, F.-D.P.; writing—original draft preparation, L.-M.P., M.I. and I.-D.M.; writing—review and editing, M.I. and F.-D.P. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki; the protocol was approved by Agence Universitaire pour la Francophonie (AUF) (A5/AUF-ECO-233 - 04.03.2014. being part of a larger research grant entitled “Étude sur la vie des étudiants—comportement alimentaire, hygiène et style de vie” supported by Centre de Réussite Universitaire—“Grigore T. Popa” University of Medicine and Pharmacy of Iași and Agence Universitaire de la Francophonie, Romania.

Informed Consent Statement: All subjects were informed about the research before they participated in the study. The agreement to fill in the questionnaire was considered as an informed consent.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Acknowledgments: “Étude sur la vie des étudiants—comportement alimentaire, hygiène et style de vie” supported by Centre de Réussite Universitaire—“Grigore T. Popa” University of Medicine and Pharmacy of Iași and Agence Universitaire de la Francophonie, Romania (competition ECCE 2020).

Conflicts of Interest: The authors declare no conflict of interest.

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