



Selected Health Behaviors among Medical Students of the Medical University of Lodz

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Abstract

Background: Health is a state of complete physical and mental well-being, and the right of every individual. Its presence is influenced by various factors. It is well known that early prevention, aimed at avoiding disease, has a greater impact on quality of life and longevity than disease treatment. Through their behavior, young people determine the development of diseases in the future. Medical students are a special group in that respect. They should be more aware of the need to lead a healthy lifestyle, but they are at risk of chronic stress and other disorders due to strenuous studies.

Objectives: Learning about selected health behaviors of medical students of the Medical University of Lodz.

Material and methods: Medical students of the Medical University of Lodz; form of the study: original online questionnaire.

Results: 76.6% of the respondents were physically active. The favorite form of physical activity of medical students in Lodz were exercise in the gym (57.1%), walking (36.7%), and running (28.6%). 67.3% of the interviewees had normal body weight. 33.6% of the respondents admitted to smoking. 0.9% of the respondents drank alcohol daily, 28% at least once a week, 57.9% at least once a month, and 13.1% did not drink alcohol at all. Only about every third student did not drink energy drinks (34.6%). 35.5% of the respondents reported sleeping problems.

Conclusions: Medical students of the Medical University of Lodz were physically active: most often they exercised in the gym and walked. Men were overweight and obese more often than women. Greater physical activity and a lower percentage of smokers in the students of higher years of study may indicate an increase in the healthy lifestyle awareness. In universities, there is a need for activities aimed at students to raise their knowledge about prevention and healthy lifestyle.

Key words: health behaviors, medical students

Introduction

Health, as defined by the World Health Organization (WHO), is a state of complete well-being (physical, mental, and social, not just the absence of disease). It is also a fundamental right of the individual [1]. Health is conditioned by many factors. According to M. Lalonde, there are 4 types of health determinants, i.e.: lifestyle (53% of the impact), physical environment (21%), human biology (16%) and healthcare organization (10%) [2]. On this basis, it was determined that lifestyle in its broad sense affects health the most.

Public health, on the other hand, is generally understood as referring to a population rather than to a specific individual [3].

The term “prophylaxis” concerns actions aimed at preventing diseases, minimizing the impact of diseases and disabilities, or delaying their progression. The so-called primary prevention, i.e., the first phase, covers actions aimed at healthy people [4]. Examples include pro-health behaviors such as avoiding stimulants, proper eating habits, physical activity, or protective vaccinations.

It is well known that early prevention has a greater impact on the quality of life and longevity than disease treatment. Young people are already determining the development of diseases in the future by their behavior. Improper lifestyle leads to the occurrence of the so-called metabolic syndrome, which includes hypertension, abdominal obesity, insulin resistance and hyperlipidemia. With the successful defeat of infectious diseases, this new non-communicable disease has become a major threat to the health of the modern world [5].

Medical students are a specific group. On the one hand, they should be more aware of the need to lead a healthy lifestyle, but on the other hand, they are exposed to stress and sleep disorders due to strenuous studies.

Moreover, at the time of the COVID-19 pandemic, having health knowledge has been shown to have a protective effect on medical students and reduce feelings of fear, while smoking and drinking appear to have a negative effect on the fear of COVID-19 [6]. Health-promoting behaviors, and in particular positive mental attitudes, can play a protective role with regard to the symptoms of anxiety and depression in a stressful situation [7].

Objective: The aim of the study was to learn about selected health behaviors of medical students of the Medical University of Lodz.

Material and methods: The study was conducted from November to December 2022. An original online survey questionnaire was used. The study group consisted of students of all years (1–6) at the Medical University of Lodz. The study involved 107 participants (50.5% men and 49.5% women). The data contained in the surveys were entered into an MS Excel spreadsheet, and then the collected empirical material was analyzed. To develop the material, descriptive methods and statistical inference methods were used. A χ^2 test of independence was used to compare the prevalence of individual trait varieties in the study groups, and to test the relationship between qualitative traits. Those differences between frequencies and the correlations between traits for which the calculated value of the χ^2 test turned out to be equal to or greater than the critical value read from the tables for the corresponding number of degrees of freedom with a probability of error of $p < 0.05$ were considered statistically significant.

Results

76.6% respondents (82 persons) were physically active. 48.6% exercised at least 3 times a week. The favorite form of physical activity of medical students in Lodz were exercise in the gym (57.1%), walking (36.7%), and running (28.6%). Slightly less popular forms of exercise were swimming (23.5%), team games (19.4%), yoga and pilates (16.3%), and other sports (18.4%). Physically active students accounted for 53.8%, in the second year – 50%, in the third year – 57.1%, in the fourth year – 77.2%, in the fifth year – 75.9%, and in the sixth year – 85%. High school students were more physically active.

67.3% of the subjects had a normal body weight, with a BMI between 18.5 and 24.9 kg/m^2 . Among women, normal-weight subjects accounted for 77.3% of the respondents' group, while men accounted for 57.4%. The observed differences were found to be statistically significant – $p < 0.05$, $\chi^2 = 23.82$ (Fig. 1). Among the respondents, 100% of the underweight ($\text{BMI} < 18.5 \text{ kg}/\text{m}^2$) were women. Obese people ($\text{BMI} > 30 \text{ kg}/\text{m}^2$) accounted for 1.9% of all respondents.

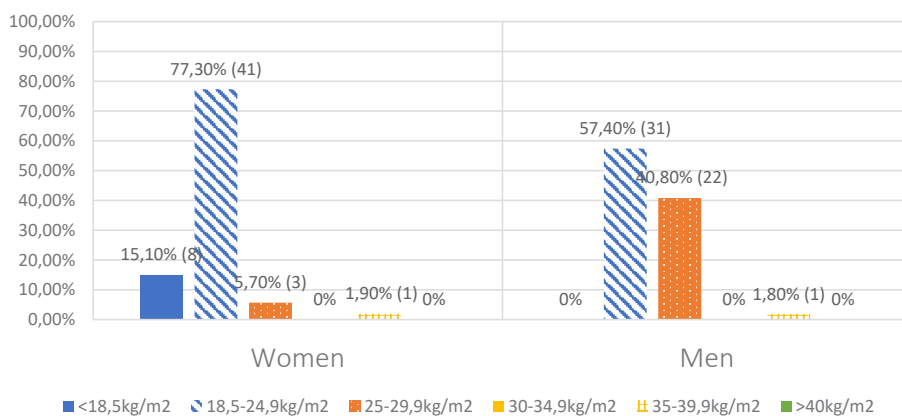


Figure 1. BMI value among students by gender

44.5% of the respondents ate 3 or more servings of fruit and vegetables per day. 51.5% consumed them 1–2 times a day. Only 5.9% of the respondents did not consume fast-food products. 43.6% of the respondents ate them once a week, 43.6% once a month, and 5% consumed them daily. The percentage of women eating fast-food at least once a week was about 32% of the subjects, and for men the value was 59.3%. Therefore, men consumed such products more often than women. The observed differences were found to be statistically significant – $p < 0.05$, $\chi^2 = 17.84$ (Fig. 2).

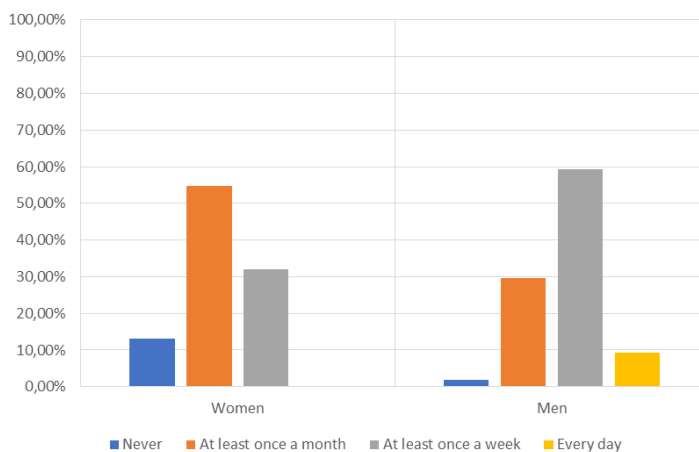


Figure 2. Frequency of consumption of fast-food products among students by gender

33.6% of the respondents smoked tobacco. Among them, 73.5% were daily smokers, and 26.5% smoked occasionally, mainly during social gatherings. Female smokers accounted for 20.8% and male smokers for 42.6%. The observed differences were found to be statistically significant – $p < 0.05$, $\chi^2 = 5.884$ (Fig. 3).

As for the first year students, 53.8% of them smoked, while in the group of the sixth year students the value was 15%. The tobacco product most often used by medical students were electronic tobacco heaters – 50%, followed by traditional cigarettes and e-cigarettes (30% each).

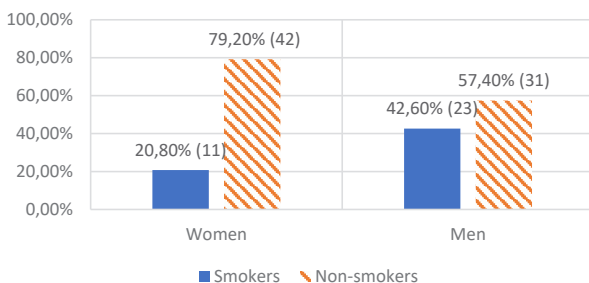


Figure 3. Smoking among students by gender

Alcohol consumption: 0.9% of the subjects drank daily, 28% at least once a week, 57.9% at least once a month, and 13.1% did not drink at all. Differences in the frequency of alcohol consumption by women and men turned out to be statistically insignificant – $p > 0.05$ (Fig. 4).

The most popular alcoholic beverages among the interviewees were beer (52.7%), followed by wine (44.1%), and vodka (38.7%). Women were more likely to reach for wine, and men were more likely to drink beer and vodka.

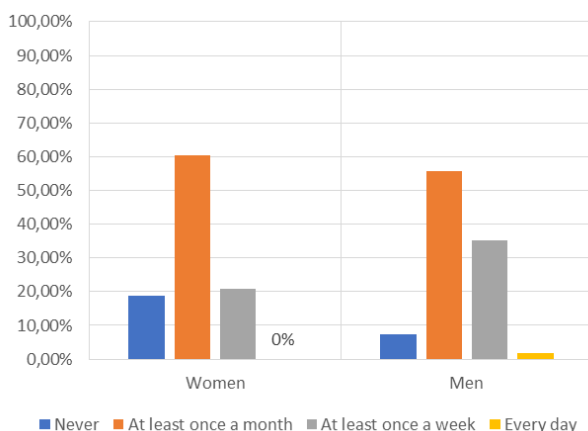


Figure 4. Frequency of alcohol consumption among students by gender

Only about every third student did not drink energy drinks (34.6%). 27.1% of the students consumed energy drinks at least once a week, and 7.5% of the respondents admitted to consuming them every day. 49.1% of women and 18.5% of men said they never consume energy drinks. According to the study results, 32.1% of women and 27.8% of men had energy drinks at least once a month, while 15.1% of women and 37% of men consumed them at least once a week. Daily drinking of energy drinks was reported by 14.8% of men and 0% of women. The observed differences were found to be statistically significant, $p < 0.005$, $\chi^2 = 20.348$ (Fig. 5).

As many as 35.5% of the respondents reported sleeping problems. 52.3% of the students slept 6–7 hours a day, 14% – 8 hours or more, and 33.6% of the respondents slept only 4–5 hours a day.

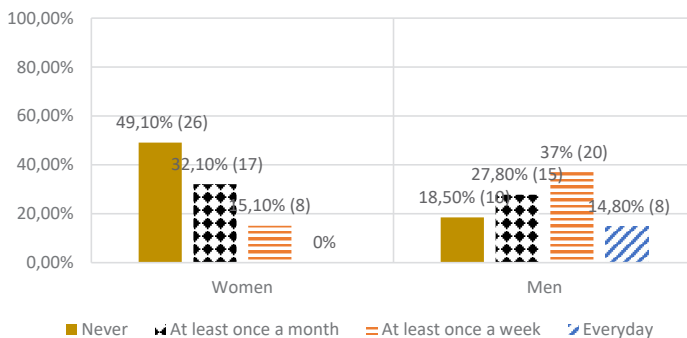


Figure 5. Frequency of students' energy drinks consumption by gender

97.2% of the subjects were vaccinated against COVID-19 – 96.2% of women and 98.1% of men (Fig. 6, Fig. 7). Most of them (78.6%) received three doses of the vaccine, and 12.6% received four doses. In contrast, only 17.8% of all subjects were vaccinated against the influenza virus.

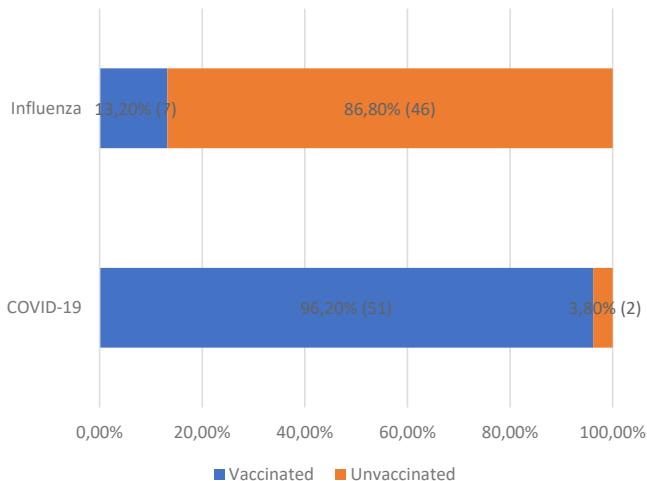


Figure 6. Vaccination against influenza and COVID-19 among female students

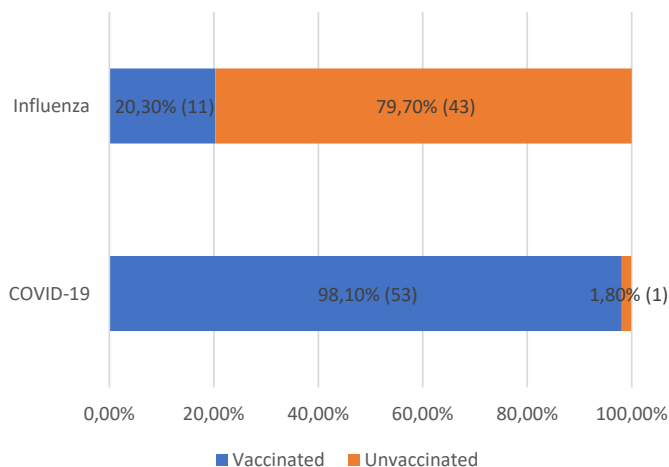


Figure 7. Vaccination against influenza and COVID-19 among male students

Discussion

A healthy lifestyle can be understood as maintaining physical activity, a proper diet rich in vegetables and fruit, ensuring a good quality of sleep, or avoiding obesity or stimulants. Another element of a healthy lifestyle is vaccination, which is the primary prevention of many diseases. Young adults leading a healthy lifestyle are hypothetically able to extend their years of health. WHO studies show that up to 70–80% of deaths in developed countries and 40–50% in low- and middle-developed countries are due to diseases caused by the lack of healthy lifestyles [8]. On the one hand, medical students, as a group with greater awareness of the etiopathogenesis of many diseases, should follow the rules of a healthy lifestyle, but on the other hand, due to burdensome studies, they are exposed to chronic stress, lack of sleep, or lack of free time. Obesity is a disease that predisposes to other diseases, e.g., cardiovascular ones and cancer, and it undoubtedly shortens life. In the study discussed in this paper, obese students accounted for 1.9% of the study group. 76.6% of the students counteracted obesity through physical exercise, with more active students in the higher years of study, which may indicate an increase in the awareness of older students. Similar conclusions were

drawn from a Lublin study checking the knowledge on the complications of obesity among students of the Medical University of Lublin and the Maria Curie-Skłodowska University. Nearly half (49%) of the medical students interviewed showed moderate or high awareness of the effects of obesity, while the majority of the UMCS students exhibited low awareness in this respect. In addition, it was shown that at the Medical University, fifth-year students showed a higher level of knowledge compared to first-year students [9]. Researchers from Wrocław studying health behaviors among the students of the Mustafa Kemal University in Hatay (Turkiye) concluded that women exhibited a higher level of health-friendly behaviors than men, whereas the opposite was true as far as physical activity was concerned. In the studied environment, it was possible to notice positive correlations between the field of studies related to health issues and health behaviors and physical activity of the students in this field. Students of other majors showed lower levels of health-friendly behaviors and physical activity [8]. As for the comparison of medical students to students of teacher education programs, as the ones who should also promote a healthy lifestyle with their attitude, a study from Lublin of 2019 showed that 14% of the students surveyed had never played sports, and less than 20% of the respondents declared undertaking daily physical activity [10]. According to the Lublin study, students regularly sleeping 6–7 hours a day accounted for about 39% of the respondents, and in the case of the study discussed in this paper it was about 52.3%. According to the 2021 study on the mental well-being of medical students, 75% of the respondents had sleep disorders [11]. In the study analyzed, 35.5% of the respondents declared sleep problems. As far as the results on alcohol consumption are concerned, the majority of the students drank it at least once a month (57.89%); men accounted for a higher percentage of drinkers. Similar results were obtained in the aforementioned to the Lublin study, where female students drank less than male students. On average, alcohol consumption at least once a month is declared by 48% of women and 33% of men [11]. Students often resorted to energy drinks. According to the world literature, the most common stimulant used by students is coffee, followed by other forms of caffeine, such as energy drinks [12].

A study conducted in 2020 among students of physiotherapy, nursing and obstetrics showed that the study group leads an average healthy lifestyle; the most physically active are future physiotherapists (about 90% of them do sports in their free time). Among the studied groups, most students did not smoke cigarettes [13]. According to the results of this study, it can be also noted that the percentage of smokers among medical students decreases with the duration of their studies. On the other hand, a study conducted by researchers from Szczecin showed that students of medical and non-medical universities differed in terms of the declared health behaviors. Medical college students had a higher severity of health behaviors [14]. A study comparing the health behaviors of first-year students living in family homes and moving from home to study was also conducted. The results showed that people living in the family home made healthier food choices, such as eating more vegetables and homemade sandwiches. In addition, female students made healthier choices than male students, as they were less likely to consume fast food or sugary drinks [15], the consumption of which is known to contribute to the development of obesity, already among children [16]. According to this study, about 45.8% of the respondents consumed fast-food products at least once a week, and these were more often men than women (59.3% vs 32%). Physical education students exhibited poor health behaviors, but still better than those studying at non-health faculties [17]. In addition, most studies have shown that women were more likely to perform better in terms of health behaviors than men [17]. As far as the analysis of primary prevention in the form of protective vaccinations is concerned, in the study conducted in Egypt in 2021 on medical students most respondents (90.5%) considered the COVID-19 vaccine important [18]. The results obtained in this study also indicated high immunization against SARS-COV-2. Among the subjects, 97.2% were vaccinated; those with 3 doses accounted for 78.6%, and those with 4 doses – 12.6%. In comparison, only 17.8% of the subjects were vaccinated against influenza. However, this result was significantly higher than in the general population – Poland has been experiencing low acceptance of influenza vaccinations for years, which is illustrated by the vaccination rate of the whole population of approx. 4%.

In terms of the flu vaccination status, Poland ranks among the last in Europe. In the 2019/2020 season, 4.12% of Poles were vaccinated against influenza, while in the 2018/2019 season the percentage was only 3.9% [19]. According to the reports of Israeli researchers, a healthy lifestyle is abandoned or significantly discontinued when doctors start residency training. Given the workload and emotional stress associated with the profession, it is recommended that curricula provide students with the means to help them adopt healthier lifestyles [20].

Conclusions

1. Medical students of the Medical University of Lodz were physically active: most often they exercised in the gym and walked. Among the active people, students of higher grades predominated.
2. Men were overweight and obese more often than women. Underweight was more typical of women. Fast-food products consumption in the medical student community was high, and higher among men. Numerous medical students drank energy drinks, and some of them even consumed them on a daily basis.
3. The percentage of students smoking cigarettes and other tobacco products decreased with the duration of their studies.
4. Greater physical activity and a lower percentage of smokers in the higher years of study may indicate an increase in the awareness of healthy lifestyle.
5. Most students were vaccinated against COVID-19. The flu vaccination rate was low.
6. In universities, there is a need for activities aimed at students to increase their knowledge about prevention and healthy lifestyle.

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