

## LIFESTYLE OF STUDENTS FROM DIFFERENT UNIVERSITIES IN WROCLAW, POLAND

Dorota Jakubiec<sup>1\*</sup>, Danuta Kornafel<sup>2</sup>, Agata Cygan<sup>1</sup>, Lucyna Górska-Kłęk<sup>1</sup>, Krystyna Chromik<sup>3</sup>

<sup>1</sup>Department of Human Biology, University School of Physical Education in Wrocław,  
Al. I. Paderewskiego 35, 51-612 Wrocław, Poland

<sup>2</sup>Department of Psychology, Faculty of Education, University of Lower Silesia,  
Strzegomska 55, 53-611 Wrocław, Poland

<sup>3</sup>Unit of Physical Anthropology, University School of Physical Education,  
Al. I. Paderewskiego 35, 51-612 Wrocław, Poland

### ABSTRACT

**Background.** Changes in the economic and political system that took place in Poland in recent decades had a significant impact on lifestyles of different social groups, especially in youngsters as vulnerable and open to all novelty and changes.

**Objective.** The aim of this study was to evaluate the healthy or non-healthy behaviours including physical activity, diet, time devoted for sleeping, leisure, stress and the use of drugs by students of four universities in Wrocław.

**Material and Methods.** The study involved 604 students (305 women and 299 men) from four universities in Wrocław: University of Wrocław - 25.0%, Wrocław University of Technology - 24.5%, University School of Physical Education (AWF) - 25.2% and Wrocław Medical University - 25.3%. A questionnaire developed for this study was used. The questions were both open and closed, one or multiple answers could be matched. The questions related to: physical activity, nutrition, time devoted for sleeping, leisure, stress and stimulants.

**Results.** On the basis of the results it was found that students mostly reported an average level of physical activity. The highest level of physical activity was presented by students of the University School of Physical Education and the lowest by students of the University of Wrocław. Just one in ten students consumed meals on a regular basis, including one in five studying in the AWF. Almost half of the respondents (48.7%) spent 5-7 hours sleeping. Every tenth student slept less than five hours. Most respondents preferred passive forms of recreation, only one in three practiced sports in their spare time (usually students of the AWF). Every fourth student declared smoking, and more than 90% consumed alcohol.

**Conclusions.** Lifestyle of majority of the students surveyed did not follow the recommendations of preventive care. The need for more efficient education of students is obvious, which will lead to the future positive changes in their lifestyle, reducing the risk of lifestyle diseases.

**Key words:** *lifestyle, health, students*

### STRESZCZENIE

**Wprowadzenie.** Zmiany ekonomiczne i ustrojowe, jakie miały miejsce w Polsce w ostatnich dziesięcioleciach w sposób znaczący wpłynęły na styl życia różnych grup społecznych. Grupą niewątpliwie podatną i otwartą na wszelkie nowości i zmiany są młodzi ludzie

**Cel badań.** Celem pracy była ocena zachowań pro- i antyzdrowotnych – w tym: aktywności fizycznej, sposobu odżywiania, długości snu, spędzania czasu wolnego, stresu i stosowania używek przez studentów czterech uczelni wrocławskich.

**Material i metody.** W badaniach wzięło udział 604 studentów (305 kobiet i 299 mężczyzn) z czterech wrocławskich uczelni wyższych: Uniwersytetu Wrocławskiego -25,0%, Politechniki Wrocławskiej - 24,5%, Akademii Wychowania Fizycznego (AWF) - 25,2% i Uniwersytetu Medycznego - 25,3%. W badaniu wykorzystano autorski kwestionariusz ankiety.

**Wyniki.** Stwierdzono, że studenci w większości odznaczali się średnim poziomem aktywności fizycznej, najwyższy poziom cechował studentów Akademii Wychowania Fizycznego, najniższy - studentów Uniwersytetu Wrocławskiego. Tylko, co dziesiąty student odżywił się regularnie, w tym, co piąty z AWF. 48,7% badanych przeznaczała na sen 5 -7 godzin. Co dziesiąty student sypiał krócej niż 5 godzin. Większość badanych preferowała bierne formy odpoczynku, a co trzecia osoba uprawiała sport w czasie wolnym (najczęściej studenci AWF). Co czwarty student deklarował palenie papierosów, a ponad 90% spożywanie alkoholu.

\***Corresponding author:** Dorota Jakubiec, University School of Physical Education in Wrocław, Department of Human Biology, Al. I. Paderewskiego 35, 51-612 Wrocław, Poland, phone: +48 71 347 34 13, e-mail: dorota.jakubiec@awf.wroc.pl

**Wnioski.** Styl życia większości badanych studentów odbiegał od zaleceń profilaktyki zdrowotnej. Widoczna jest potrzeba edukacji młodych ludzi, która doprowadzi w przyszłości do korzystnych zmian w ich stylu życia ograniczając ryzyko chorób cywilizacyjnych.

**Sowa kluczowe:** styl życia, zdrowie, studenci

## INTRODUCTION

The search for new solutions to improve health of communities was reflected in paying attention to the concepts of lifestyle, particularly healthy lifestyle. Very popular Lalonde Report identifies four groups of factors determining the “health field” of an individual. As a result of estimates of the share of each factor in the health field, the biggest role is assigned to lifestyle (about 53%), followed by environmental factors (21%), biological factors (16%) and health care (10%) [as cited in 4]. Lifestyle factors determine human health to a great extent in later life. They are already forming in childhood and adolescence [as cited in 8].

Economic and political system changes that took place in Poland in the recent decades had a significant impact on lifestyles of different social groups. Young people are a group undoubtedly vulnerable and open to all novelty and changes [20]. The period of studying requires a lot of both physical and mental energy as the students have to divide their time between lectures, exams and social life [8]. Aspects of health-related lifestyle behavior of students are often tested. This group is chosen due to the aforementioned openness and sensitivity to change and fashion and because of the nature of lifestyle associated with studies [4, 15].

Studying is a time when young people present a relatively high level of social activity; on the other hand they are burdened by considerable duties. The lives of students undergo numerous changes, which often aggravate stressful situations. The lack of ability to cope with stress often results in emotional disorders that manifest themselves in neurotic state, depression, eating disorders, and frequent use of stimulants. Many students after leaving their family home are not adequately educated to ensure proper eating habits in new conditions of independent existence. These deficiencies are often the result of a difficult financial situation of students [20]. Lifestyle in this period may affect health later on, also because of the consolidation of pro- and anti-healthy habits.

The aim of this study was to evaluate the healthy or non-healthy behaviors, including physical activity, diet, time devoted for sleeping, leisure, stress and the use of drugs by the students from four universities in Wrocław.

## MATERIAL AND METHODS

604 students (305 women and 299 men) of four universities in Wrocław: the University of Wrocław (UWr) (n=151; 25,0%), Wrocław University of Technology (PWr) (n=148; 24,5%), the University School of Physical Education (AWF) (n=152; 25,2%) and Wrocław Medical University (UM) (n=153; 25,3%) of all years of studies took part in the voluntary and anonymous survey conducted in 2011.

In the study a diagnostic survey method was used. A questionnaire developed for this purpose consisting of 25 questions was used. Particulars of the questionnaire concerned the general characteristics of a study group; the questions were both open and closed, one or multiple answers could be matched. The questions related to: physical activity, nutrition, time devoted for sleeping, leisure, stress and stimulants.

Statistical analysis was performed using PASW Statistic 18.0 program. The significance variation of the studied groups was determined by the  $Chi^2$  test for significance limit of  $p = 0.05$ .

## RESULTS

The physical activities of students of all the universities were indicated by themselves as average (68.5%) and high level (25.3%). Only 6.1% evaluated the status of their activity as low. The differences in the self-assessments of their physical activity in various universities were statically significant ( $Chi^2 = 63.19$   $df = 6$ ,  $p = 0.00$ ). AWF students assessed their physical activity as high (47.4%) or medium (52.6%). In contrast, UWr students declared the lowest physical activity (11.3%) of the respondents. Male students were much more likely (33.4%) than female (17.4%) to rate their level of physical activity as high. They also slightly more often indicated low level of their activity (7.4%) than the females (4.9%). The differences are statistically significant ( $Chi^2 = 24.2$   $df = 2$ ,  $p = 0.00$ ).

In the survey on the time spent on physical activity, the respondents could indicate such answers as a) daily, b) several times a week, c) once a week, d) rarely, e) not at all. For statistical purposes, answers a and b were combined into “often”, and c and d into “rarely”. The answer e remained unchanged. The differences were statistically significant ( $Chi^2 = 69.58$   $df = 6$ ,  $p = 0.00$ ).

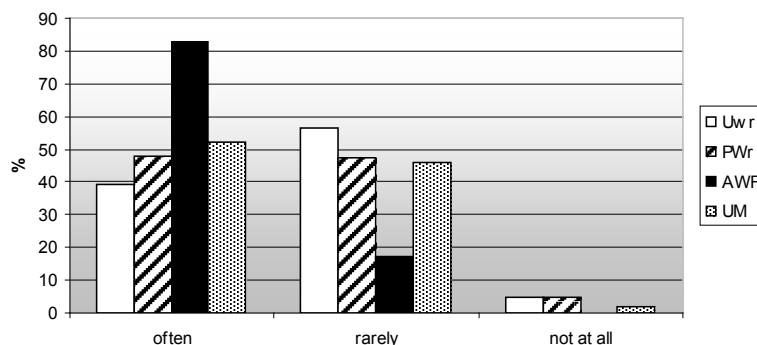


Figure 1. The frequency of physical activity did by the students of Wroclaw universities

Students of all the universities declared frequent physical activity (55.6%) (Table 1). AWF students strongly predominated in this group of respondents (82.9%). Unfortunately, almost 3% of the respondents did not take any physical activity at all. The most common in this group were students of the University of Wroclaw and Wroclaw University of Technology (4.6% and 4.7%) (Figure 1).

Table 1. The frequency of doing physical activity in relation to gender

Frequency		Gender		Total
		Women	Men	
often	number	151	185	336
	% of gender	49,5%	61,9%	55,6%
rarely	number	149	102	251
	% of gender	48,9%	34,1%	41,6%
not at all	number	5	12	17
	% of gender	1,6%	4,0%	2,8%
Total	number	305	299	604
	% of gender	100,0%	100,0%	100,0%

Over 60% of men declared frequent participation in physical activity (49.5% of women), but also 4% did not participate in it at all (female students 1.6%) (Table 1.). The differences were statistically significant ( $Chi^2 = 15.06$   $df = 2$ ,  $p = 0.001$ ).

The regularity of basic meals consumption was also evaluated by the respondents. Only 11.8% of students consumed meals on a regular basis - AWF students predominated in this group (21.7%). Students from

other universities ate regular meals significantly less often (PWr 10.1%, UM 7.8%, UWr 7.3%). As many as 39.4% of all the students eat irregularly, mainly students of the University of Wroclaw (48.3%) (Figure 2). The differences were statistically significant ( $Chi^2 = 28,72$   $df = 6$ ,  $p = 0.00$ ). Women were more likely than men to declare regular consumption of main meals (Table 2). Thus, men eat more irregularly (41.6%) than women (37.1%). The differences are not statistically significant ( $Chi^2 = 2.72$   $df = 2$ ,  $p = 0.256$ ).

Table 2. The regularity of meals consumed by students in relation to gender

Regularity of meals		Gender		Total
		Women	Men	
yes	number	41	30	71
	% of gender	13,7%	9,8%	11,8%
sometimes	number	147	148	295
	% of gender	49,2%	48,5%	48,8%
no	number	111	127	238
	% of gender	37,1%	41,6%	39,4%
Total	number	299	305	604
	% of gender	100,0%	100,0%	100,0%

The students slept an average of 5-7 hours (48.7%) (Table 3). Almost half of the respondents from AWF slept over 7 hours (48.3%). Every tenth student slept less than 5 hours, including every fifth student of UWr (21.7%). The differences were statistically significant ( $Chi^2 = 27.89$   $df = 6$ ,  $p = 0.00$ ) (Figure 3.).

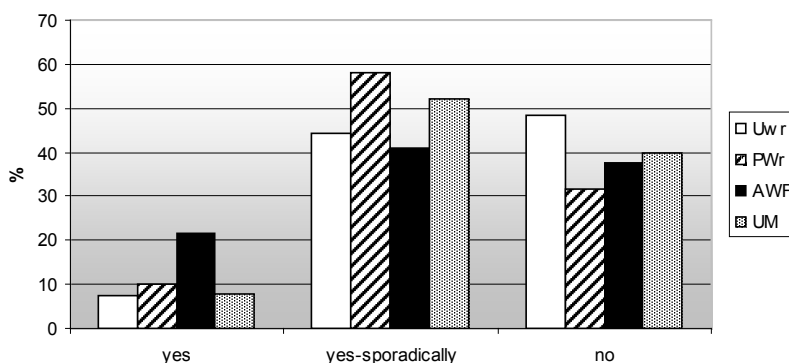


Figure 2. The regularity of meals consumed by students in relation to various universities in Wroclaw

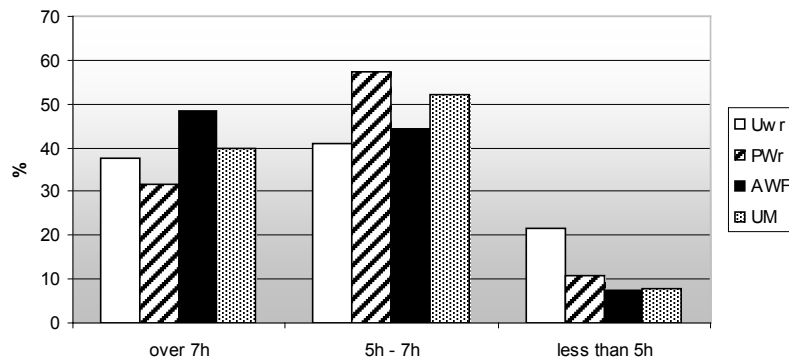


Figure 3. Time spent sleeping by the students Wroclaw universities

Women spent more time sleeping than men. Almost every other female student and every third male student slept over 7 hours. In contrast, 13.7% of men and 10.2% of women slept less than 5 hours (Table 3). These relationships are not statistically significant ( $Chi^2 = 2.4$ ,  $df = 2$ ,  $p = 0.3$ ).

Table 3. Time spent sleeping in relation to gender

Time of sleep		Gender		Total
		Women	Men	
over 7 h	number	127	111	238
	% of gender	41,6%	37,1%	39,4%
5-7 h	number	147	147	294
	% of gender	48,2%	49,2%	48,7%
below 5 h	number	31	41	72
	% of gender	10,2%	13,7%	11,9%
Total	number	305	299	604
	% of gender	100,0%	100,0%	100,0%

Students of all the universities dedicated their free time mostly to meeting friends and using the computer. Much less frequently they spent their time sleeping or watching TV. AWF students often than others chose the answer associated with sporting activities (Table 4). Up to three answers could be selected in this question, therefore values do not add up to 100%.

Table 4. Leisure activities of students of particular universities

Activity	UWr	PWr	AWF	UM	Total
Reading books	44,4%	33,1%	20,4%	31,4%	32,3%
Doing sport	14,6%	24,3%	<b>58,6%</b>	31,4%	32,3%
Rushing the computer	<b>60,9%</b>	<b>58,1%</b>	44,7%	<b>56,2%</b>	<b>55,0%</b>
Watching TV	8,6%	13,6%	13,8%	15,7%	12,9%
Sleeping	29,8%	22,3%	29,6%	26,8%	27,2%
Going for a walk	38,4%	30,4%	27,6%	39,2%	33,9%
Meeting friends	<b>68,2%</b>	<b>67,6%</b>	<b>62,5%</b>	<b>51,6%</b>	<b>62,4%</b>

Women more often spent their free time with friends, while male students more often reported using computer. Out of active leisure activities men preferred sport and women going for a walk (Table 5). Up to three answers could be selected in this question, therefore values do not add up to 100%.

Table 5. Leisure activities for women and men

Activity	Women	Men	Total
Reading books	35,1%	29,4%	32,3%
Doing sport	26,2%	<b>38,5%</b>	32,3%
Rushing the computer	43,9%	<b>66,2%</b>	55,0%
Watching TV	12,8%	13,1%	12,9%
Sleeping	26,9%	27,4%	27,2%
Going for a walk	<b>48,2%</b>	19,4%	33,9%
Meeting friends	<b>64,3%</b>	60,5%	62,4%

Students of all universities tried to deal with stress by listening to music, walking or exercise. Almost half of the respondents from AWF practiced sports and only one in seven respondents from UWr did the same. Also, every seventh student of PWr and AWF drunk alcohol, students of UWr and AWF equally often smoked cigarettes (Table 6). Up to three answers could be selected in this question; therefore values do not add up to 100%.

Table 6. Ways of dealing with stress of students of particular universities

Activity	UWr	PWr	AWF	UM	Total
Eating	28,5%	26,4%	23,0%	30,7%	27,2%
Going for a walk	41,1%	43,9%	39,5%	43,1%	<b>41,9%</b>
Smoking cigarettes	<b>14,6%</b>	10,1%	<b>12,5%</b>	7,2%	11,1%
Taking sedatives	3,3%	2,0%	4,6%	5,2%	3,8%
Drinking alcohol	8,6%	<b>14,2%</b>	<b>13,2%</b>	3,3%	9,8%
Exercise (doing sport)	13,9%	25,0%	49,3%	36,6%	<b>31,3%</b>
Listening to music	66,2%	58,1%	56,6%	69,3%	<b>62,6%</b>

Both women and men most often listened to music in stressful situations. Female students also went for a walk or ate to relieve stress, while male students preferred doing sport or going for a walk. Every tenth respondent reached for cigarettes, regardless of gender. Every eighth student drank alcohol and every twentieth student took sedatives. Up to three answers could be selected in this question; therefore values do not add up to 100% (Table 7).

Every fourth student smoked cigarettes. Most of them were AWF students (one fifth smoked regularly), and UWr students. Frequently declaring non-smoking were UM students. The differences were statistically significant ( $Chi^2 = 23.04$   $df = 6$ ,  $p = 0.00$ ) (Figure 4.).

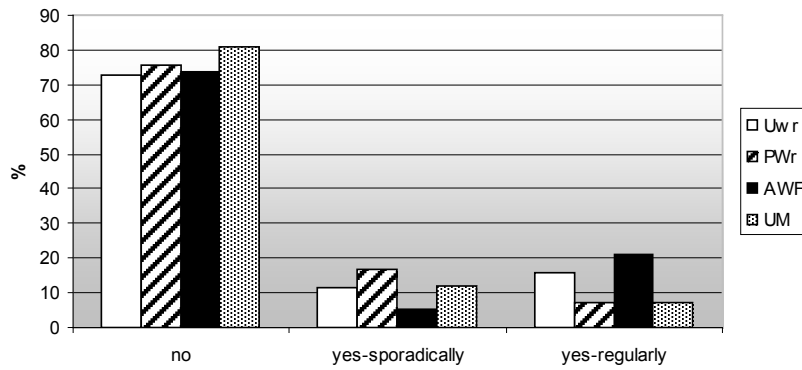


Figure 4. Frequency of smoking declared by the students of Wroclaw universities

Table 7. Ways of dealing with stress of men and women

Activity	Women	Men	Total
Eating	38,4%	15,7%	27,2%
Going for a walk	47,2%	36,5%	41,9%
Smoking cigarettes	11,8%	10,4%	11,1%
Taking sedatives	5,2%	2,3%	3,8%
Drinking alcohol	6,9%	12,7%	9,8%
Exercise (doing sport)	24,9%	37,8%	31,3%
Listening to music	60,0%	65,2%	62,6%

Almost as many women as men declared not smoking cigarettes. However, among regular smokers there are more women (Table 8). These relationships are not statistically significant ( $Chi^2 = 1.29$   $df = 2$ ,  $p = 0.52$ ).

Table 8. Smoking cigarettes in relation to gender

Smoking cigarettes		Gender		Total
		Women	Men	
no	number	228	230	458
	% of gender	74,8%	76,9%	75,8%
yes - sporadically	number	33	35	68
	% of gender	10,8%	11,7%	11,3%
yes - regularly	number	44	34	78
	% of gender	14,4%	11,4%	12,9%
Total	number	305	299	604
	% of gender	100,0%	100,0%	100,0%

Most of the students declared as occasional alcohol consumption. Only one in 13 of all the respondents did not drink alcohol at all. More than one-fifth of PWr students drank often, similarly to the students of UWr

and AWF (Figure 5). The differences were statistically significant ( $Chi^2 = 15.79$   $df = 6$ ,  $p = 0.015$ ).

By far the largest proportion of men and women drink alcohol occasionally. Among the persons who regularly consume alcohol is twice as many men than women (Table 9). The differences are statistically significant ( $Chi^2 = 15.56$   $df = 2$ ,  $p = 0.00$ ).

Table 9. Drinking alcohol in relation to gender

Drinking alcohol		Gender		Total
		Women	Men	
no	number	25	28	53
	% of gender	8,2%	9,4%	8,8%
yes - occasionally	number	246	203	449
	% of gender	80,7%	67,9%	74,3%
yes - regularly	number	34	68	102
	% of gender	11,1%	22,7%	16,9%
Total	number	305	299	604
	% of gender	100,0%	100,0%	100,0%

BMI in most subjects remained within standards ( $n=462$ ; 76,5%), one in 12 persons was underweight ( $n=51$ ; 8,4%), and every 7 person was overweight or obese ( $n=91$ ; 15,1%).

No statistically significant correlation has been found between lifestyle and BMI of the subjects. Among parents of the students' secondary education (32.3% of fathers, 40.1% of mothers) as well as higher education prevailed (32.1% of fathers and 43% of mothers). For lower education amounted in both primary and vocatio-

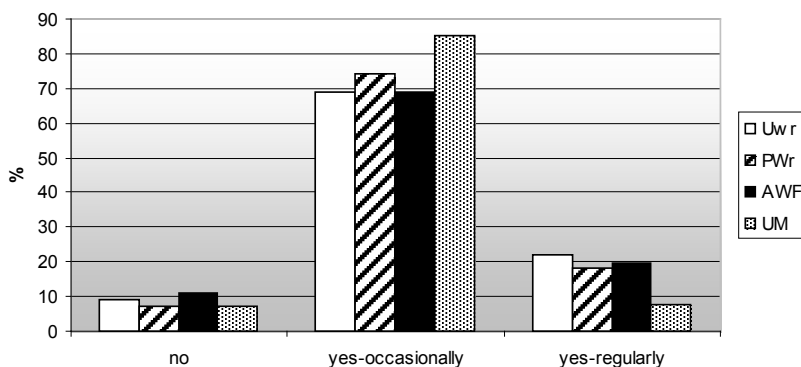


Figure 5. Frequency of alcohol consumption declared by the students of Wroclaw universities

nal education (35.6% of fathers, 16.9% of mothers). The mothers in comparison with the fathers had higher level of education. No relationship was found between the education of parents and the general lifestyle of students.

## DISCUSSION

One of the most important lifestyle factors is the relation between physical activity and health. There are links between the three main components of human development, i.e. hereditary factors, physical activity and health, and it is physical activity that has direct impact on health.

The study shows that the majority of students assessed their level of activity as average (68.5%) and high (25.3%). Only 6.1% of respondents assessed the state of their activity as low. All AWF students indicated high or average state of physical activity (respectively 47.4% and 52.6%). Similar results were obtained by *Muszkiet*a and *Bronikowski* [12] among students of physical education at various universities in Poland. The vast majority of respondents assessed their level of physical ability as good (women 57.8%, men 57.5%) and very good (women 28.2%, men 34.8%).

Most students of all the surveyed universities in Wroclaw often did physical activity (55.6%). Among them, 82.9% were AWF students. This data coincides with the study of *Kowalska* [7] conducted among students of the University School of Physical Education in Warsaw. 52% of the students of that university claimed to have spent a lot of time doing physical activity.

Almost 3% of the students of Wroclaw universities did not do any physical activity at all. According to a study by *Muszkiet*a and *Bronikowski* [12], 9.2% of female students and 12.1% of male students of physical education did not take an active part in the development of their physical activity. It was found, however, that 80.5% female and 74.3% male students actively practiced every day, regularly every 2-3 days, or once a week.

Diet also has a major impact on lifestyle. The present study sought to quantify the regularity of eating basic meals. 39.4% of all the respondents ate irregularly, mainly students of the University of Wroclaw (48.3%). Slightly different results were obtained in a study conducted among university students in Gdansk [9]. Less than half of the respondents ate meals at stable time. Only 7% of students and 11% of students declared regular consumption of each of the basic meals. It can also be seen that male students attached a little more attention to eating regularly than female students.

Analyzing the results of *Lisicki's* study [9], it is worth paying attention to the reasons which prevent regular eating. Predominating were clearly the reasons

directly related to the studies – the amount of studying itself (55%). The vast majority of people in this group pointed to the schedule at the university as an obstacle to regular eating. University students in Lublin provided different reasons. Irregularity in eating pattern was most often associated with the need to travel between the university and the place of residence, as well as a large number of classes and financial problems [8]. Many other studies also report irregularities in basic meal consumption [5, 8, 10, 14, 18].

The present study shows that university students in Wroclaw slept an average of 5-7 hours (48.7%), which is similar to the results of *Pullman* et al. [15]. Almost half of the respondents from AWF slept more than 7 hours (48.3%). Among all the respondents 11.9% spent less than 5 hours on sleep, including every fifth student the University of Wroclaw and every tenth student of Wroclaw University of Technology. These figures are slightly different than the results from the studies of *Górska-Klęk* et al. [5]. Most students of the University of Wroclaw and the University of Economy in Wroclaw slept 6-8 hours. More than half of those surveyed also slept during the day and there was no difference in this respect between the universities. These discrepancies may be due to other hourly ranges in the questionnaire responses. A different period of the academic year and a slightly different way of life of students could also have influenced the results. According to a study by *Pawłowski* [14], female students slept regularly (7-8 hours per day) more often (24.7%) than male students (20.9%).

When analyzing the lifestyle of students it is also important to assess their anti-healthy behavior. Although the studies of *Dietz* et al. [3] and *Walther* et al. [19] found that compared to other age groups the group 18-24 has the highest percentage of smokers (25.1% in Denmark and 27% in Austria), the present study show that 75.8% did not smoke cigarettes. The study of *Górska-Klęk* [5] demonstrated that as much as 40% of AWF students and 27% of University of Economy students (Wroclaw universities) smoked habitually. Most of the students stated that they did not smoke cigarettes, which may be indicative of increasingly higher awareness of the respondents. This is also confirmed by other authors [11, 13, 14, 18, 20]. Regardless of the students' attitude towards smoking, 70% of students in each group felt that they lead a healthy lifestyle [14]. Drinking alcohol by students was studied by many authors [1, 7, 13, 16, 20]. However, data on alcohol consumption among students should be treated with caution, because even if the majority of students declared that they drink alcohol occasionally, it does not say anything about the amounts, types of alcohol drunk by the respondents, or situations in which it takes place.

Leisure activity among students is an alarming phenomenon. Surveyed students of Wroclaw universities

spent their free time primarily on meeting friends and using the computer (present study). It is difficult to compare such data to the studies of other researchers, because multiple-choice answers were not always available. However, studies of *Pullman et al.* [15] showed that nearly 80% of students spend more than 2 hours a day using computer in their free time. Physical activity during leisure time was not considered by many respondents as necessary to lead a healthy lifestyle. 77.3% of those who did not practice sport thought so [14]. Convergent results were obtained by conducting a survey among students in Olsztyn and Warsaw. Only 58.4% of those surveyed said they spend free time in an active way [18]. Passive leisure activities can be observed in the behavior of many Poles. According to a survey by CBOS from 2010 [17], leisure time is mostly spent on watching television (52%) or talking with children and family (36%). Only 24% of respondents go for a walk in their free time and every sixth actively does sports. The environment of AWF students and their parents showed much more interest in active leisure activities [6]. More than half of the parents of students from the University School of Physical Education in Gdansk spent their free time actively, whereas the percentage of parents of students of pedagogy doing so was 25%. These results indicate how significant is the impact of family home and how important are parents as a source of positive patterns of behavior.

Healthy lifestyle for the surveyed students was associated mainly with physical activity and a healthy diet, less frequently with rest or not using stimulants. Demonstrated mistakes in the behaviour of students make up an integrated group of factors that contribute to the development of lifestyle diseases. Increasingly, students were forced to work while studying or studying more than one faculty, which has a huge impact on their lifestyle and causes more non-healthy behaviour. It also seems necessary to develop at universities such organizational solutions that would allow students to begin and finish their classes at a relatively constant time and thus contribute to regular eating habits. Universities should allow students to organize their schedule so that they have a longer break in the afternoon guaranteeing peaceful consumption of a main meal. In conjunction with a thorough knowledge, it would lead to positive changes in their lifestyle and more effective prevention of lifestyle diseases.

## CONCLUSIONS

1. Lifestyle of large part of the surveyed group of students did not follow the recommendations of preventive health care.
2. There is a need to focus on education that would

better inform young people on the health impact of lifestyles. It therefore seems necessary to introduce health education at universities.

## Conflict of interest

*The authors declare no conflict of interest.*

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