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*Evaluation of dietary habits and other forms of behaviour
of students from Lublin*

One of the basic factors responsible for the deteriorating health state of the Polish society is improper lifestyle, which includes dietary habits. University students constitute a specific community, in which many negative factors, including irregular lifestyle and dietary habits related to it or addictions are likely to lead to future health consequences. Monitoring of these forms of behaviour may reveal abnormalities which should be the basis of moulding proper dietary habits and working out suitable educational programmes.

The unquestionable effects of lifestyle, particularly dietary habits, on health were the grounds for undertaking the study about selected aspects of dietary habits among university students. The indirect purpose was to determine the frequency of alcohol drinking and tobacco smoking as well as the use of slimming diets.

MATERIAL AND METHODS

An anonymous and voluntary survey using a specially designed questionnaire was carried out in the group of 71 students of one faculty of the Agricultural Academy in Lublin. The questionnaire questions concerned, among other things, the regularity of meals, frequency of consumption of various foodstuffs and substances and eating preferences. Moreover, BMI was evaluated.

The results were statistically analysed. The values of parameters were characterized by the number and percentage. The inter-group differences for unrelated qualitative characteristics were detected by the homogeneity χ^2 test. The inter-characteristic relations were evaluated using the independence χ^2 test. $P < 0.05$ was accepted as statistically significant. The database and statistical calculations were based on the STATISTICA 7.0 software (StatSoft, Polska).

RESULTS

The quality of students' diets may depend on financial and living standards and accommodation during the academic year. In the group studied, 48% of students still lived with their families or owned flats whereas 52% lived in lodgings or dormitories. The majority of students were provided with full board (79%) by their parents. Most of the students living with their parents or in their own flats (62%) assessed their financial and living conditions as very good or good while those living in lodgings or dormitories (65%) as bad ($p < 0.05$). Almost all of them (87%) stated that their dietary

habits had changed for the worse once they had started their studies, which they associated with changes in lifestyle (71%). The results obtained are presented in Table 1.

Table 1. Demographic structure of the students' population

Factor	Place of living		p	%
	Home, own flat 48%	Dorms, lodgings 52%		
Financial and living conditions	very good 62% bad 38%	very good 35% bad 65%	<0.05	very good 48% bad 52%
Source of support	parents 88% own job, scholarship 12%	parents 70% own job, scholarship 30%	>0.05	parents 79% own job, scholarship 21%
Did dietary habits change for the worse?	yes 82% no 18%	yes 92% no 8%	>0.05	yes 87% no 13%
What influenced this change?	financial means 20% organizational means 80%	financial means 38% organizational means 62%	>0.05	financial means 29% organizational means 71%

The study shows that 85% of the respondents most often had 3–5 meals a day (Table 2). On average, one fifth of students living away from their home had only 1–2 meals a day (21%) and every day started their classes without breakfast (19%). However, the differences were not statistically significant as the majority of students (46%) answered that they did not have breakfast several times a week.

Moreover, there were no statistical relations between the place of living and regularity of meals – 81% of the respondents found their dietary habits irregular. The majority of the respondents (62%) have not been using any slimming diets. Those who have, were mainly girls. Every second student obtained information about rational nutrition from television and Internet, whereas only 18% from the professional literature.

The statistically significant relations were observed in answers concerning the frequency of alcohol drinking and place of living. Almost half of the students (41%) living away from home admitted to drinking alcohol at least once a week, those living with their parents drank alcohol less frequently. It is alarming that almost one fourth of the students (24%) living on their own consumed alcohol every day. Thirty-five per cent of the respondents smoked cigarettes – 10 a day, on average.

Daily consumption of wholemeal bread and groats was reported by only 14% of students and 60% admitted that they consumed those foodstuffs less frequently than 3–4 times a week. As many as 47% of respondents living with parents and 57% of those living in lodgings or dormitories did not have any meals with milk or its products during the day. Fifty per cent of the students had vegetables and fruits once a day and 49% admitted to eating sweets every day. Only 9% of the students admitted to having fish once a week while the majority had fish less frequently or never. Thus their meals did not meet the requirements of rational dietary standards.

The students living without parents statistically significantly more often used ready-made and easy-to-prepare powdered or jar food, 49% of respondents in this group answered that they had this kind of food several times a month, whereas the majority (74%) of those living with parents admitted that they never had such products. All the students additionally had fast food; its consumption at least 2–3 times a week was stated by 71% of students living with parents, however, the differences were not significant.

Furthermore, BMI in the group studied was analysed (Table 3) and it was found to be normal in the majority of students; underweight was observed in 34% and overweight in 11% of respondents. Obesity was not found.

Table 2. Characteristics of dietary habits and other forms of behaviour among students

Factor	Home, own flat	Dorms, lodgings	p	%
Regularity of meals	yes 20% no 80%	yes 18% no 82%	>0.05	yes 19% no 81%
Number of meals	3-5 91% 1-2 9%	3-5 79% 1-2 21%	<0.05	3-5 85% 1-2 15%
Leaving home without breakfast	every day 9% several times a week 41% never 50%	every day 19% several times a week 51% never 30%	>0.05	every day 14% several times a week 46% never 40%
Information about diet	TV, Internet 56% professional literature 12% magazines, friends 32%	TV, Internet 46% professional literature 24% magazines, friends 30%	>0.05	TV, Internet 51% professional literature 18% magazines, friends 31%
Slimming diets	yes 38% no 62%	yes 38% no 62%	>0.05	yes 38% no 62%
Alcohol drinking	every day 12% at least once a week 22% less often 66%	every day 24% at least once a week 41% less often 35%	<0.05	every day 18% at least once a week 31% less often 51%
Tobacco smoking	yes 35% no 65%	yes 35% no 65%	>0.05	yes 35% no 65%
Consumption of wholemeal bread and groats	once a day 16% 3-4 times a week 30% less often 54%	once a day 12% 3-4 times a week 23% less often 65%	>0.05	once a day 14% 3-4 times a week 26% less often - 60%
Consumption of milk and its products	twice a day 24% once a day 29% less often 47%	twice a day 22% once a day 21% less often 57%	>0.05	twice a day 21% once a day 25% less often 54%
Consumption of raw vegetables and fruits	2-3 times a day 29% once a day 44% less often 17%	2-3 times a day 8% once a day 57% less often 35%	<0.05	2-3 times a day 18% once a day 50% less often 32%
Consumption of fish and its products	at least once a week 10% less often than once a week 44% never 46%	at least once a week 8% less often than once a week 38% never 54%	<0.05	at least once a week 9% less often than once a week 41% never 50%
Consumption of sweets	every day 50% several times a week 32% less often 18%	every day 48% several times a week 45% less often 7%	>0.05	every day 49% several times a week 39% less often - 12%
Consumption of powdered and jar food	several times a week 5% several times a month 21% never 74%	several times a week 18% several times a month 49% never 33%	<0.05	several times a week 11% several times a month 35% never 54%
Consumption of fast food	once a week 29% at least 2-3 times a month 71% less often 0%	once a week 43% at least 2-3 times a month 57% less often 0%	>0.05	once a week 36% at least 2-3 times a month 64% less often 0%

Table 3. Body mass index of the students

BMI	Share %
<20	34%
≥20 and <25	55%
>25 and <30	11%
≥30	0%

DISCUSSION

The results indicate numerous dietary errors in the group studied, which means that dietary habits of university students are only partly consistent with rational diet recommendations.

The analysis of data shows that, irrespective of the place of living, the students' diets were improper and irregular. This is likely to be related to specificity of studies, which does not favour regular lifestyle as students have to spend most of the day at the university. It may be supposed that diet errors were also caused by insufficient knowledge about nutrition obtained mainly from television and Internet. The studies conducted amongst students of the Warsaw Technical University by R. Olędzka et al. (4) in 1999–2000 confirm the above findings.

The analysis of the regularity and quality of meals revealed that the most common dietary errors included: irregularity of breakfast consumption, too low amounts of milk, its products, fish, fruits, vegetables, fibre-rich products and excessive consumption of sweets. Similar trends were observed among students of other universities (1, 2, 3, 4, 5, 7). This shows that the diets are extremely deficient, particularly in unsaturated fatty acids, vitamins and mineral salts and, on the other hand, excessive in ready-made and easy-to-prepare powdered and jar foodstuffs, fast-food and refined carbohydrates. This phenomenon is alarming as increased consumption of unhealthy food often competes with consumption of wholesome products, increases the risk of obesity and leads to various diseases resulting from dietary deficiencies. There is evidence demonstrating strict correlation between students' diets, their well-being, activity and work abilities.

The study revealed the correlation between the place of living and frequency of alcohol drinking. Twice more (24%) students living without parents admitted that they drank alcohol every day and 41% drank it at least once a week. This may be treated as a pathological situation as alcohol not only impairs the abilities of learning, memorizing, logical thinking causing learning problems, but also inhibits the emotional development and increases the risk of drug abuse (6).

The majority of students who admitted to drinking alcohol were heavy smokers, which is even more alarming as smoking also increases the risk of drug abuse. It is believed that tobacco smoking is "the gate to addiction" (8). Therefore, the reliable information about adverse effects of addictive substances should be provided already in primary schools. Moreover, prophylactic educational programmes for teenagers should be introduced. Otherwise the number of addicts and deaths due to diseases related to addictive substances will increase.

The control of body weight is a new health problem; 38% of respondents (mostly girls) used slimming diets and 34% were underweight. This results from an ideal of slim figure popularized in western countries in the 60's of the 20th century and in Poland in the last decade, which is called "slim body tyranny" and promotes deficient elimination diets, particularly among girls. Young men, on the other hand, find their body weight too low and make attempts to increase it. Such attitudes among young people are mainly associated with the current social concept of attractive, desirable appearance promoted by mass media and advertisements (8). Just like improper dietary habits observed among students, their actions to change the body weight without advice of specialists should be considered as highly risky for health.

CONCLUSIONS

1. The diets of students are improper and irregular, irrespective of the place of living.
2. The most common dietary errors are irregularity of breakfast consumption, too low daily intake of milk, its products, fish, vegetables, fruits and fibre-rich products as well as excessive intake of sweets.
3. Increased consumption of easy-to-prepare powdered and jar food and fast food competes with consumption of wholesome foodstuffs, increasing the risk of obesity which is likely to lead to various diseases related to dietary deficiencies.
4. The results obtained indicate that students' dietary habits should be further monitored.
5. Students living without parents significantly more often consume alcohol. One fifth of the students living in dormitories or lodgings admitted to drinking alcohol. This may be regarded as a pathological situation as it indicates that some respondents are already addicted.
6. Our results demonstrating that improper dietary behaviour and choices are common among university students are the ground for including the issues of dietary hygiene and adverse effects of addictive substances in the health education curriculum carried out during studies. This knowledge is crucial for human health.

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SUMMARY

The main aim of the study was to assess lifestyle, particularly dietary habits, of the university students from Lublin. The anonymous and voluntary questionnaire survey was conducted in the group of 71 students of the same faculty. The questions concerned regularity of meals, frequency of

consumption of various groups of foodstuffs and addictive substances as well as eating preferences. Moreover, BMI in the population studied was determined. The results were statistically analysed. The students' diets were improper and irregular, irrespective of the place of living. The most common dietary errors were irregularity of breakfast consumption, too low daily intake of milk and its products, fish, vegetables, fruits and fibre-rich products as well as excessive amounts of sweets. The students consumed higher amounts of easy-to-prepare powdered or jar food and fast food, which competed with wholesome products. This phenomenon increases the risk of obesity thus leading to various diseases related to dietary deficiencies. The university students living away from their home significantly more often consumed alcohol. Every fifth student living in the dormitory or lodgings drank alcohol every day. This situation may be regarded as pathological as it is likely to indicate that some respondents are already addicted. The findings show that students' lifestyle should be further monitored.

Ocena sposobu odżywiania się i innych zachowań studentów Lublina

Głównym celem pracy była ocena stylu życia, a zwłaszcza sposobu odżywiania młodzieży akademickiej w Lublinie. Anonimowe i dobrowolne badania ankietowe przeprowadzono w grupie 71 studentów reprezentujących jeden kierunek studiów. Pytania ankietowe dotyczyły między innymi regularności odżywiania się oraz częstości konsumpcji i poziomu preferencji różnych grup produktów spożywczych i używek. W badanej próbie ustalono wskaźnik BMI. Uzyskane wyniki badań poddano analizie statystycznej. Niezależnie od miejsca zamieszkania studenci odżywiali się nieprawidłowo i nieregularnie. Najczęstszym błędem żywieniowym była nieregularność spożycia pierwszych śniadań, zbyt mały udział w całodziennym żywieniu mleka i jego przetworów, ryb, owoców i warzyw oraz produktów bogatych w błonnik, natomiast zbyt duża ilość słodczy. Studentów cechowała również zwiększona konsumpcja żywności szybkiej w przygotowaniu, z torebek, słoików oraz żywności typu *fast food*, która konkurowała ze spożyciem produktów wartościowych. Zjawisko to zwiększa ryzyko otyłości, a zarazem może doprowadzić do licznych schorzeń wynikających z niedoborów żywieniowych. Młodzież akademicka mieszkająca poza domem znacznie częściej spożywała alkohol. Co piąty student mieszkający w akademiku czy stacji przyznawał, że spożywa alkohol codziennie. Ten stan można uznać za patologiczny, bowiem może świadczyć o tym, że część ankietowanej młodzieży jest już uzależniona. Uzyskane wyniki badań wskazują na konieczność dalszego monitorowania stylu życia studentów.