

PHYSICAL ACTIVITY, PHYSICAL DEVELOPMENT AND EATING HABITS WITHIN THE LIFESTYLE OF STUDENTS FROM UKRAINE

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Tsos A., Bergier B., Bergier J. (2014), *Physical activity, physical development and eating habits within the lifestyle of students from Ukraine*. Health Problems of Civilization, 4 (8), p. 46-53

Summary: The aim of this study was to investigate the physical activity, the basic parameters of physical development, and eating habits of students from Ukraine. The research method of diagnostic survey using a IPAQ questionnaire and nutrition questionnaire was carried out in 2013 among 2 125 students, for 60.8% of women and 39.2% men.

As a result of studies beneficial indicators of total physical activity were demonstrated, with higher physical activity of persons who have sufficient amount of free time.

The level of BMI indicator is in the majority of students at a normal level. The amount and frequency of meals is a sign of positive healthy behaviors.

Also the disadvantageous behaviors occur, such as avoidance and loss of control over eating and induction of vomiting for the sake of one's body.

Keywords: physical activity, physical development, eating habits, students from Ukraine

Introduction

It is quite commonly emphasized that regular physical activity is an important factor in a healthy preventive lifestyle (Blair, Brodney 1999, Andersen et al. 2006, Blair et al. 2001). In order to familiarize oneself with the status and determinants of physical activity levels of students active research has been conducted in recent years in Poland (Biernat 2011, Bergier, Kapka - Skrzypczak et al. 2012 Mynarski, Rozpara, Królikowska et al. 2012). It is estimated that the proper physical activity of the youth puts restraints to a large extent on the contemporary problem of civilization which is overweight and, consequently, obesity.

It is almost universally accepted that obesity is the cause of numerous diseases, including mainly cardiovascular system and thereby a factor which lowers the quality of life. Obesity consequently facilitates the development of other diseases. Over the past few years there has been a disturbing trend of growing number of the overweight people. According to the World Health Organization in 2007 a number of overweight people in the world amounted to 1,5 billion and 523 million of those obese, and already in 2015 these numbers will amount to 1,6 billion and 700 million people¹. Also Polish studies indicate problems of overweight and obesity within the society (Rywik et al., 2003, Szponar et al., 2003, Zdrojewski et al. 2004). This problem also applies to Polish university students (Rębacz - Maron et al. 2013, Romanowska - Tołłoczko 2011, Szczodrowska - Krysiak 2013, Myszkowska-Ryciak i in. 2011, Seń i in. 2012, Marzec - Koch 2013, Krejpcio i in. 2013). The results of scientific research on the state of nutrition of students in our country are not unequivocal. Surveys among female students from the University of Szczecin (Rębacz- Maron et al. 2013) showed a positive image of the self-assessment of their physical activity and nutritional status in the light of BMI factor. Assessment of daily portions of food rations among the students of the Medical University of Lublin showed very low energy values in both women and men. A new phenomenon is reaching for dietary supplements. Survey among students of Dietetics of the University of Life Sciences in Poznan and psychology Academy of Special Education in Warsaw have shown that it is common among students, and one of the reasons is aesthetics (Krejpcio i in. 2013). These results of research (conducted in recent years), on the diet habits of students indicate that the problem is still present.

¹ World Health Organization. Obesity and overweight. Fact.. Sheet. No 311, September 2006

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Research methodology

Aim of the study. The aim of the study was to investigate the level of physical activity, physical development, the basic parameters including body mass index (BMI), and eating habits as well as behaviors related to the above among students from Ukraine.

Material and research methods

The study was conducted in 2013 among 2,125 students from 12 faculties at the National University in Lutsk in Ukraine in the age range between 17-22, including 1,291 women (60,8%) and 834 men (39,2%).

For the evaluation of physical activity a long version of the International Physical Activity Questionnaire (IPAQ) supplemented by the author's questionnaire was applied. Data on basic parameters of physical development which enabled the calculation of BMI was also applied. A questionnaire regarding eating habits was applied, in which questions from the research conducted at the Institute of Medicine in Lublin were used.

Research results

Characteristics of physical activity and physical development.

The respondents indicated in the majority (51,4%) for too little free time, and the sufficient amount of time was indicated by 37,7%. Level of physical activity is satisfactory, since 50,2% has high activity and only 5,2% has a low one. Self-assessment of physical fitness is assessed by a vast majority as the average – 70,6% with high efficiency at the level of 13,9%.

What is also positive is the image of their sport activity, since 7 or more disciplines are trained by 23,1% and 36,3% of them train 4-6 disciplines. Only 3,1% of the students expressed the opinion that they do not practice any sport. Dreams of practicing disciplines are less impressive, as a clear majority (69,6%) lists from one to two disciplines, and only 13,0% indicated three or more.

The characteristics of the physical development involves positive development of BMI factor, which in case of 74,2% places their body weight at a normal level, with only 8,7% of people who are overweight. Slightly more critical self-assessment of their physique, as 69,2% rated it as normal, but 13,0% noted the overweight. Almost similar percentage distribution of student youth from Ukraine wants to lose weight – 47,8%, and does not see the need for it – 52,2%.

The vast majority of respondents (70,7%), for the sake of their figure, would not want to gain weight, while 29,3% of students expressed disagreement with this (Table 1).

Table 1. Researched students according to individual features

Assessment of amount of free time	None n=231 (10,9%)	Too little n=1093 (51,4%)	Sufficient n=801 (37,7%)
Level of physical activity	Low activity n=111 (5,2%)	Moderate activity n=948 (44,6%)	High activity n=1066 (50,2%)
Self-assessment of physical activity	Low n=330 (15,5%)	Average n=1500 (70,6%)	High n=295 (13,9%)
BMI classification	Underweight n=364 (17,1%)	Correct value n=1577 (74,2%)	Overweight n=184 (8,7%)
Self-assesment of figure	Underweight n=379 (17,8%)	Normal weight n=1469 (69,2%)	Overweight n=277 (13,0%)
Did the respondent want to lose weight	No n=1110 (52,2%)	Yes n=1015 (47,8%)	
Did the respondent want to gain weight	No n=1503 (70,7%)	Yes n=622 (29,3%)	
Number of tained sports	0 n=65 (3,1%)	1-3 n=797 (37,5%)	4-6 n=772 (36,3%)
			7 and more n=491 (23,1%)

Number of sport types the respondents wishes to train	0 n=383 (18,0%)		1-2 n=1466 (69,0%)		3 and more n=276 (13,0%)	
Self-assessment of capabilities	Low n=24 (1,1%)	Average n=443 (20,8%)	High n=1185 (55,9%)	Very high n=370 (17,4%)	Perfect n=103 (4,8%)	

Factors which condition physical activity of students

The overall level of physical activity of young people studying in Ukraine is 3,560 MET / min / week * and in comparison with other studies it is high. A positive development is also the fact of large activity level in sports – 1,124 MET (Fig. 1).

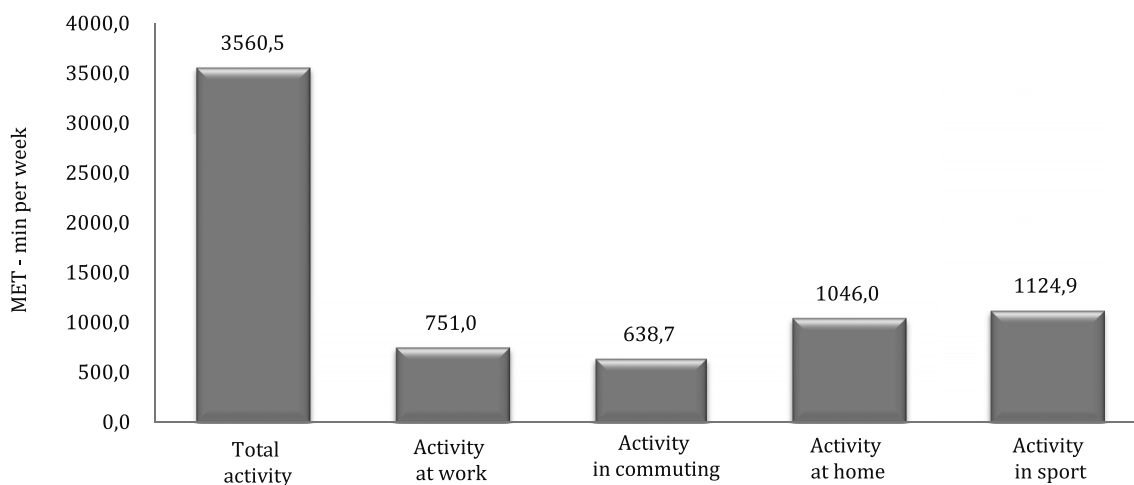


Figure 1. Areas of physical activity of students

Amount of free time students significantly determines their level of total physical activity. The lowest level of activity is characteristic of a group that does not have the free time – 3,280 MET.

It should be emphasized that in sports activities significantly higher scores were achieved by students with sufficient free time- 1,195 MET, with values of too short a time- 1,130 MET, and who do not have free time solely 823 MET (Fig. 2), (Table 2).

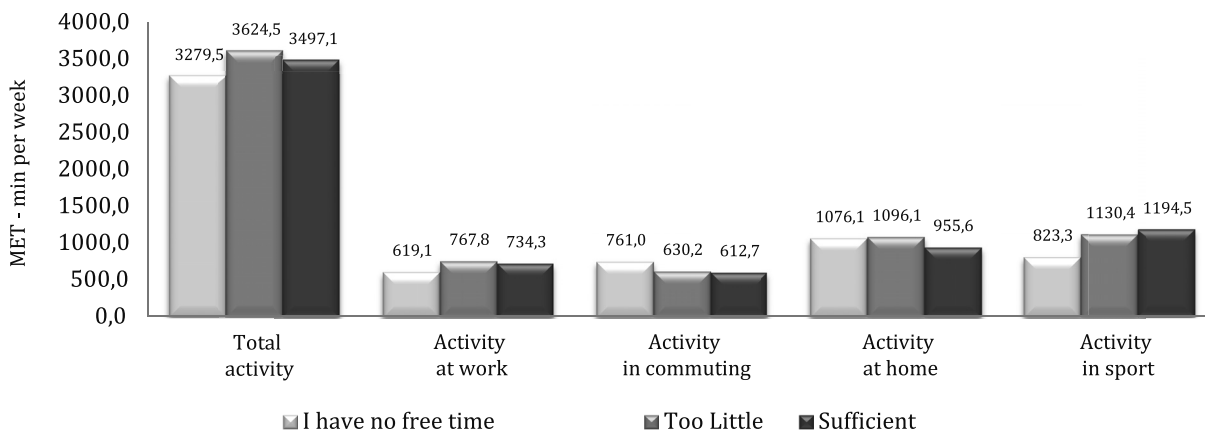


Figure 2. Areas of physical activity of students including their free time

Table 2. Diversification of areas of physical activity of students including the amount of free time

Kruskal-Wallis Test			
Area of activity	H	p	Differences
Total activity	6,748251	0,0342*	1-2
Activity at work	8,584067	0,0137*	1-2,3
Activity in commuting	6,119259	0,0469*	1-3
Activity at home	15,68305	0,0004*	2-3
Activity in sport	32,49209	<0,0001*	1-2,3

* - Significant diversification at p<0,05

Higher self-assessment of fitness highly correlates with the size of the total activity and its particular areas.

In case of self-assessment of fitness defined as high, physical activity is at the level of 4,410 MET and that defined as the average - 3,560MET and as a low one only 2,669 MET. Also in the area of physical activity at work and in there occur significantly higher rates which are defined for students with high self-assessment of their physical fitness (Fig. 3), (Tab. 3).

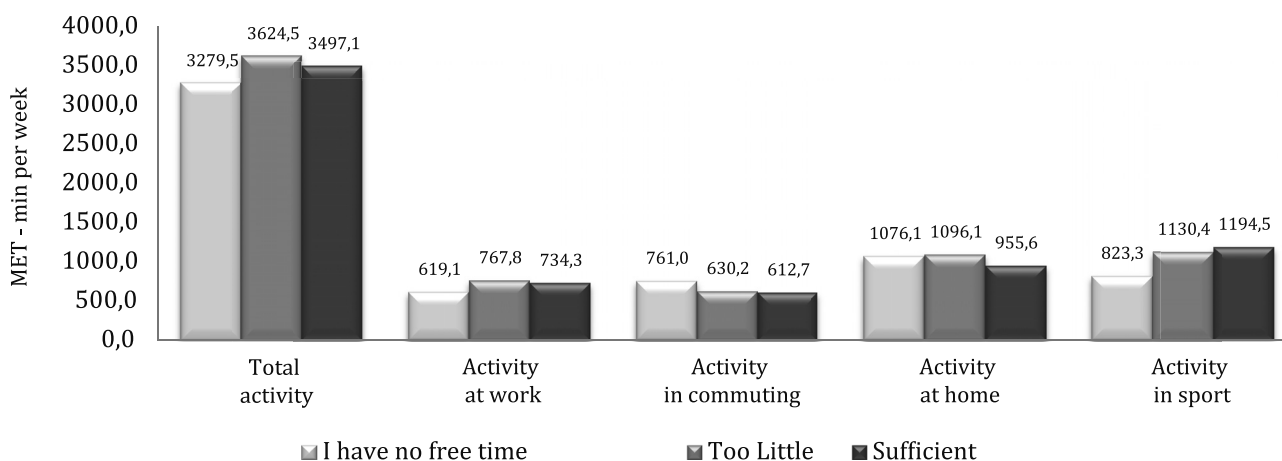


Figure 3. Areas of physical activity of students including self-assessment of physical activity

Table 3. Diversification of areas of physical activity of students in the scope of self-assessment of physical activity

Kruskal-Wallis Test			
Area of activity	H	p	Differences
Total activity	83,85445	<0,0001*	1-2,3; 2-3
Activity at work	52,93391	<0,0001*	1-2,3; 2-3
Activity in commuting	0,2476279	0,8835	-
Activity at home	4,439918	0,1086	-
Activity in sport	143,2417	<0,0001*	1-2,3; 2-3

* - Significant diversification at p<0,05

Student nutrition patterns versus physical activity

The pattern in terms of amounts and frequency of meals reveals the fact that nearly half of the students eats 3 meals a day – 47,0%, with a similar percentage eating 1-2 meals - (24,5%), and 4 and more (28,5%). Breakfast is the most widely consumed meal every day (39,8%), or several times a week – 28,4%. What is an unfavorable phenomenon is the fact that as many as 31,8% of respondents do not eat breakfast at all. In case of the second breakfast consumption the answer which dominates - (44,6%) and a few times a week. The frequency of eating

* In the following paragraphs the form of the abbreviation 'MET' will be used

lunch every day is the highest of all meals and equates to – 79,0%, while for 19,9% it is several times a week, and only a non-material number of respondents admitted to not eating this meal - 1.1%. Afternoon snack is consumed by nearly half of the respondents - 46.5% several times a week. Supper is eaten every day by the vast majority of them; daily- (73,9%), and a few times a week - (20,7%) (Tab. 4).

Table 4. Volume and frequency of consumption of meals by the respondents

Daily number of meals				
Gender	1-2	3	4 and more	Statistics
Female	351 (29,9%)	550 (46,9%)	272 (23,2%)	X ² =64,78 p<0,0001*
Male	124 (16,2%)	362 (47,3%)	280 (36,6%)	
Total	475 (24,5%)	912 (47,0%)	552 (28,5%)	
Frequency of eating breakfast				
Gender	Every day	Several times a week	Don't eat	Statistics
Female	427 (39,8%)	276 (25,7%)	370 (34,5%)	X ² =13,14 p=0,0014*
Male	270 (39,7%)	222 (32,7%)	188 (27,7%)	
Total	697 (39,8%)	498 (28,4%)	558 (31,8%)	
Frequency of eating second breakfast				
Gender	Every day	Several times a week	Don't eat	Statistics
Female	439 (39,8%)	528 (47,8%)	137 (12,4%)	X ² =31,43 P<0,0001*
Male	378 (51,2%)	312 (42,3%)	48 (6,5%)	
Total	817 (44,4%)	840 (45,6%)	185 (10,0%)	
Frequency of eating dinner				
Gender	Every day	Several times a week	Don't eat	Statistics
Female	997 (79,4%)	241 (19,2%)	17 (1,4%)	X ² =2,40 p=0,3008
Male	630 (78,4%)	168 (20,9%)	6 (0,8%)	
Total	1627 (79,0%)	409 (19,9%)	23 (1,1%)	
Frequency of eating afternoon snack				
Gender	Every day	Several times a week	Don't eat	Statistics
Female	377 (34,4%)	523 (47,8%)	195 (17,8%)	X ² =15,42 p=0,0005*
Male	294 (42,7%)	306 (44,5%)	88 (12,8%)	
Total	671 (37,6%)	829 (46,5%)	283 (15,9%)	
Frequency of eating supper				
Gender	Every day	Several times a week	Don't eat	Statistics
Female	780 (64,6%)	333 (27,6%)	94 (7,8%)	X ² =133,24 P<0,0001*
Male	714 (87,5%)	86 (10,5%)	16 (2,0%)	
Total	1494 (73,9%)	419 (20,7%)	110 (5,4%)	

Respondents who consume more meals per day are characterized by significantly higher levels of total physical activity and physical activity in sport. The total activity with 4 and more meals equates to - 3,845 MET, 3 meals - 3,419 MET, and in case of one meal - 3,620 MET. The corresponding values of sport activities are as follows: MET 1,327, 1,112 MET and 1,001 MET (Fig. 4, Tab. 5).

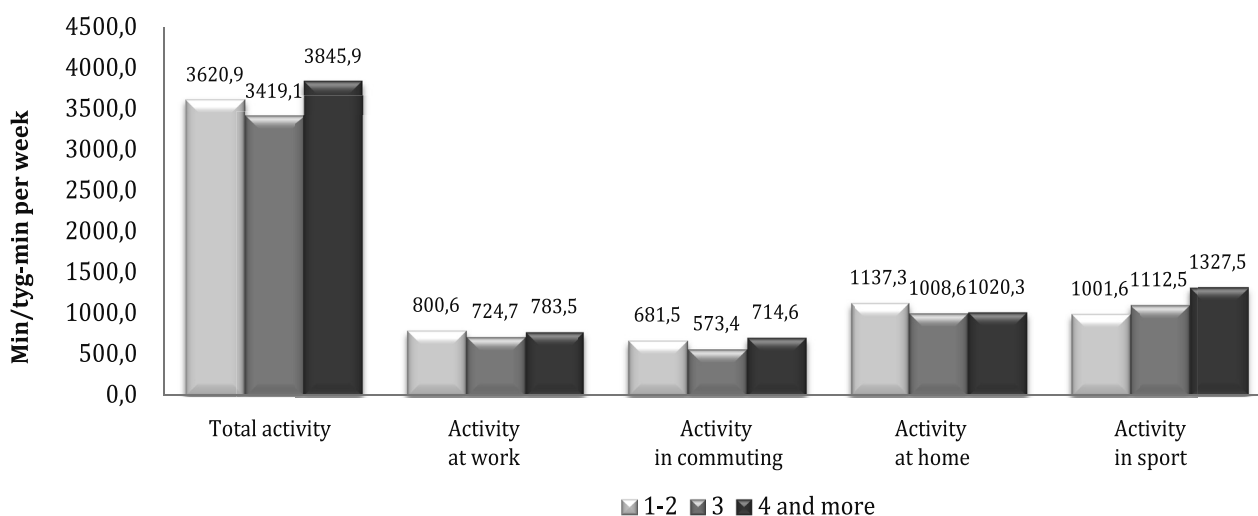


Figure 4. Areas of physical activity of students including number of consumed meals

Table 5. Diversification of areas of physical activity of students including number of consumed meals

Kruskal-Wallis Test			
Area of activity	H	p	Differences
Total activity	9,62	0,0081*	2-3**
Activity at work	3,60	0,1651	-
Activity in commuting	5,81	0,0547	-
Activity at home	4,64	0,0984	-
Activity in sport	13,40	0,0012*	3-1,2**

* - Significant diversification at $p < 0,05$

** - Numbers of variables in the range of which there is a significant diversification at $p < 0,05$

Number of consumed meals: 1 – one-two, 2 - three, 3 – four and more

Eating-related behaviors

Analysis of student behaviors related to their eating habits does not reveal a clearly positive image. What is positive is undoubtedly the fact that 72,2% of respondents eat regularly, and 27,8% do it irregularly, and that 85,2% did not experience fear of gaining weight. Less favorable information, in which it was found that 27,2% of people see the loss of control over eating, 27,4% avoid eating and the fact that that causes vomiting 9,1% cause vomiting out of the “care” about their figure (Tab. 6).

Table 6. Behaviors related to eating habits of the researched students

Loss of control over eating			
Gender	No	Yes	Statistics
Females	906 (70,2%)	385 (29,8%)	X ² =11,00 p=0,0009*
Males	640 (76,7%)	194 (23,3%)	
Total	1546 (72,8%)	579 (27,2%)	
Fear of putting on weight			
Gender	No	Yes	Statistics
Females	1004 (77,8%)	287 (22,2%)	X ² =142,94 p<0,0001*
Males	806 (96,6%)	28 (3,4%)	
Total	1810 (85,2%)	315 (14,8%)	

Causing vomiting			
Gender	No	Yes	Statistics
Females	1152 (89,2%)	139 (70,8%)	X ² =11,30 p=0,0008*
Males	780 (93,5%)	54 (6,5%)	
Total	1932 (90,9%)	193 (9,1%)	
Avoiding eating			
Gender	No	Yes	Statistics
Females	833 (64,5%)	458 (35,5%)	X ² =108,20 p<0,0001*
Males	710 (85,1%)	124 (14,9%)	
Total	1543 (72,6%)	582 (27,4%)	
Irregular meals			
Gender	No	Yes	Statistics
Females	921 (71,3%)	370 (28,7%)	X ² =1,31 p=0,2516
Males	614 (73,6%)	220 (26,4%)	
Total	1535 (72,2%)	590 (27,8%)	

* - significant diversification at p<0,05

Discussion

The results of the study of Ukrainian youth physical activity show a positive image, as evidenced by the high value of their total physical activity- 3,560 MET, which is higher than the results of other studies of students in Poland (Biernat 2011, Bergier et al. 2012, 2014, Mynarski et al. 2012).

A positive image among the surveyed students is visible in their significant participation in sports activities and active participation in training many sport disciplines.

It ought to be also emphasized that the value of their high self-assessment of physical fitness, which significantly correlates with the level of physical activity.

The characteristics of physical development, expressed within the BMI factor, it is worth to emphasize the normal body weight in the great majority of students, and the fact that almost half of young people would like to lose weight, which is a good example of healthy attitudes.

Also the characteristics of eating patterns is positive which is due to the right amount and frequency of meals. It should be emphasized that the greater amount of eaten meals is the essential factor conditioning the physical activity.

Behaviors related to nutrition are shown as less positive, as a large group indicates a loss of control over eating, avoiding food, and moreover- the fact that there is a group, though sparse, the participants of which cause vomiting for the sake of care of their figure.

Taking into account the whole scope of the results of research on physical activity, physical development and the eating habits it should be noted that students from Ukraine have a positive image of their health attitudes.

Conclusions

Detailed analysis of the researched study issue allows for some generalizations about the health-related attitudes of students from Ukraine.

1. Students have a positive ratio of total physical activity, and half of them meets the requirement of high activity.
2. Increased physical activity is characteristic of persons with sufficient amount of free time.
3. Students are fond of significant amount of sporting activity as exemplified by their active participation in many sport disciplines.
4. The physical development of most students, expressed by BMI factor, is normal with the existence of a small group of respondents with overweight problems.
5. The amount and frequency of meals reveals a positive picture of healthy behaviors and significantly determines the level of total physical activity.
6. There are certain adverse behaviors related to nutrition, such as: the loss of control over eating, avoidance of eating or an issue of causing vomiting for the sake of one's figure.

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Submitted: 09.11.2014

Accepted: 04.12.2014