

PHYSICAL ACTIVITY LEVELS IN FEMALE STUDENTS OF TERNOPIL STATE MEDICAL UNIVERSITY

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Background. Lifestyle is one of the major factors in the optimal development of systems and functions of human organism and health. The appropriate level of physical activity is the integral component of a healthy lifestyle.

Objective. The study was aimed to investigate the level of physical activity of the female students of Medical University.

Methods. We applied the International Physical Activity Questionnaire (IPAQ) in the long version as a research method.

Results. The study was conducted among 333 female students of Medical University of the first, second and third year of study. Detailed International Physical Activity Questionnaire evaluating physical activity, such as work, housework, sport, and physical activity during leisure time, was completed.

Conclusions. The examined female students of medical university are characterized by high level of total physical activity. Place of residence during the studies does not differentiate significantly the level of physical activity of female students.

KEY WORDS: physical activity, the International Physical Activity Questionnaire, female students, medical university.

Introduction

Lifestyle is one of the major factors in the optimal development of systems and functions of human organism and health. Healthy lifestyle is a way of living aimed at preserving and improving state of health. The appropriate level of physical activity is the integral component of a healthy lifestyle (a natural biological need defined by the set of movements performed by a person) [1, 2]. Many scientific studies proved the value of physical activity for the human body [3–8].

Physical activity is an integral part of man's life which largely affects the cardiovascular and muscular-bone systems of the body, and has a significant impact on body metabolism. In current living conditions people focus less on physical activity due to well-developed transporting infrastructure, sedentary work and

passive rest at home. Such way of live may lead to the development of various health risks. At lack of physical activity and excessive neuro-emotional stress the functional state of the central nervous system, as a mediator between the muscles and internal organs, is damaged. This causes the dysfunction of individual organs and systems of the body and contributes to the development of various diseases.

The influence of physical activity on human health is widely recognized and studied among international researchers [9–13]. The issues of physical activity of students both in bio-physiological and cultural terms are more and more commonly discussed on different continents: South Asian [14], South Africa [15, 16], Europe [17–19] and in other different countries [6, 7, 20–22], including medical universities students [23–26].

The research studies [6, 7] show the tendency of the decrease of physical activity among students of higher educational institutions. Therefore, the subject of our research was to

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investigate the level of physical activity of the female students of Ternopil State Medical University.

Material and Methods

The study was conducted among 333 female students of Ternopil State Medical University during October 2015. The participants were the first-, second- and third-year-students aged 17-20 years old. The total of 333 female students included: 106 first-year-students (31.83%), 116 second-year-students (34.83%), and 111 third-year-students (33.33%). They were asked to complete questionnaires on demographic and general physical activity. We applied the International Physical Activity Questionnaire (IPAQ) in the long version [27] as a research method. Detailed International Physical Activity Questionnaire (IPAQ) evaluating physical activity, such as work, housework, sport, and physical activity during leisure time was completed. Dependence analyses were carried out using t-test and Pearson correlation coefficient. The level of statistical significance was adopted at $p < 0.05$.

Results

The results of the research have shown significantly higher level of total physical activity of female students 5590.2 MET min/week than in Poland [28] and Turkey [20]. On the basis of the International Physical Activity Questionnaire (IPAQ) it was evidenced that the activity associated with work amounted 1428.9 MET min/week. In case of the activity associated with movement it amounted 1443.7 MET min/week. For physical activity associated with housework

the results were recorded at 1162.2 MET min/week. Physical activity in sport amounted 1555.4 MET min/week. Thus, the highest level of physical activity was identified in female students during sports workouts and the lowest during housework, but these results did not differentiate significantly (Fig. 1).

Based on the data obtained from IPAQ questionnaire on the course of study, we analysed the dynamics of physical activity during in the learning process. We established that the highest level of total physical activity of 6955.8 MET prevails in sophomores, which is by 24.42% higher than the total-level of PA, while the lowest level of total physical activity of 3855.5 MET was found in the third-year female students, which is by 31.0% less than the total level of PA. Such high rate of physical activity index in the second-year-students was observed due to high levels of physical activity at work/study, which was in 2812.7 MET (40.43%), when the index of physical activity at home was 1212.2 MET (17.42%), in the sport — 1519.4 MET (21.84%), and the rest — 1411.6 MET (20.29%). However, in the third-year female students compared to the students of the first and second years of study the lowest level of physical activity during work/training of 463.3 MET (12.01%), with activity around the house of 939.1 MET (24.35%), in the sport — 1380.7 MET (35.81%), and the rest — 1072.4 MET (27.81%) was evidenced. When comparing different types of activities of the female students, excluding physical activity during work / study, it was found that freshman have higher physical activity among students at home — 1341.3 MET, in sport — 1777.7 MET, and the rest — 1867.6 MET,

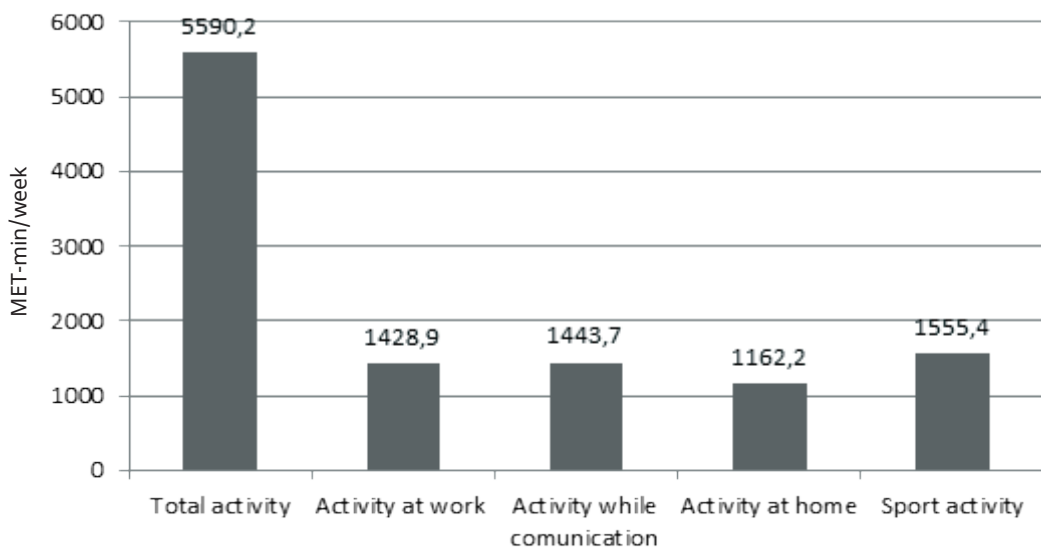


Figure 1. The level and areas of physical activity of the female students

than the second- and third-year female students, which have the lowest physical activity in all types of physical activity (Fig. 2, Table 1).

We found it interesting to discover whether the place of living of the recipients influence upon the level of their physical activity. Three places of residence were used for the analysis: dormitory, family home and parents' apartment. Also this combination showed no significant differences in the total physical activity of the female students depending on the place of daily residence (Fig. 3, Table 2).

Discussion

As a result of our research we have discovered a high level of overall physical activity in female students of Medical University (55902 MET min/week). After analysing the dynamics of physical activity of female students depending on the year of study we have found out that the highest overall physical activity (6955.8 MET) prevailed in the second-year students. Such high rate of physical activity in sophomores was due to high level of physical activity at work/ study (it was 40.43% of the total recipients of

physical activity). This fact can be explained by the location of university departments and buildings, where classes for the second-year-students took place and by the lack of direct transportation between those locations. The average level of physical activity at the work/ school is 463.3 MET in the third-year-students and it may explained by the increased duration of classes. In all other areas of physical activity (work, at home, leisure or sport) students showed high level of the researched activity, but it tended to slight decrease from the first to the third year of study. As for the residence of students, no direct connection between the place of residence (dormitory, apartment or parents' house) and the physical activity was found [17].

Thus, we can assume that regardless of the year of study and the place of residence the main factor of physical activity type among the female students of medical university is their correct (common sense) understanding of the role of this factor in a healthy lifestyle.

However, it should be emphasised that a questionnaire is the cheapest method of collec-

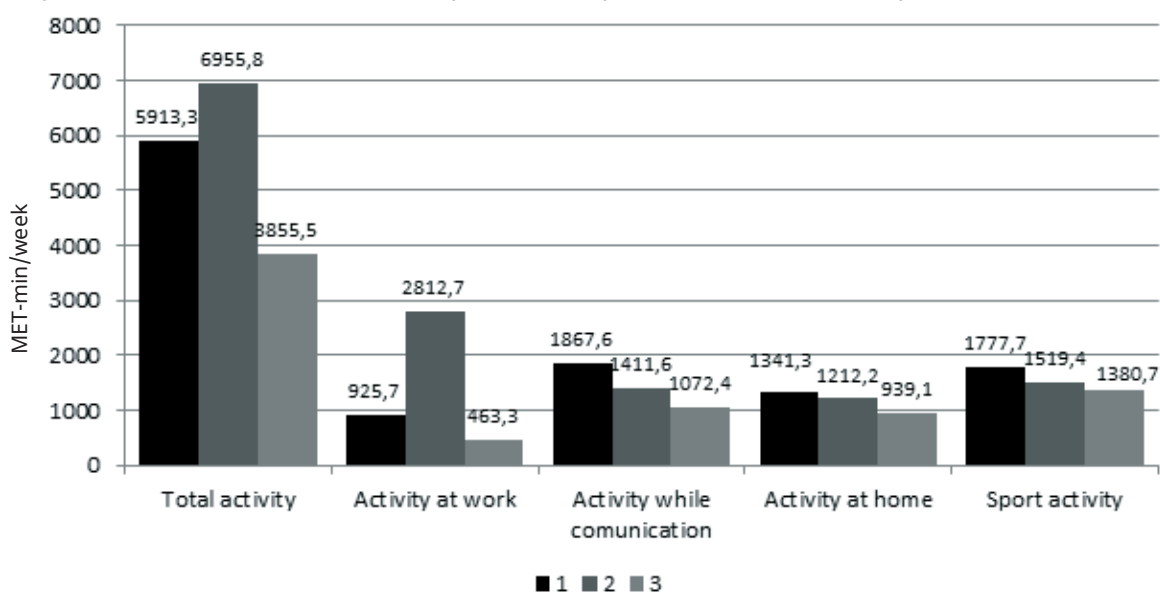


Figure 2. The level and areas of physical activity of the female students with regard to the year of study

Table 1. The differentiation of the level and areas of physical activity of the female students with regard to the year of study

Physical Activity Type	Kruskal-Wallis Test		
	H	p	Differentiation
Total activity	29,47	0,0001*	1-3; 2-3**
Activity at work	38,21	0,0001*	1-2,3; 2-3**
Activity while commuting	14,30	0,0008*	1-3**
Activity at home	7,84	0,0198*	1-3**
Sport activity	8,47	0,0145*	1-3**

Note. * — significant differences at $p < 0,05$; ** — years of study between which there is a statistically significant variation.

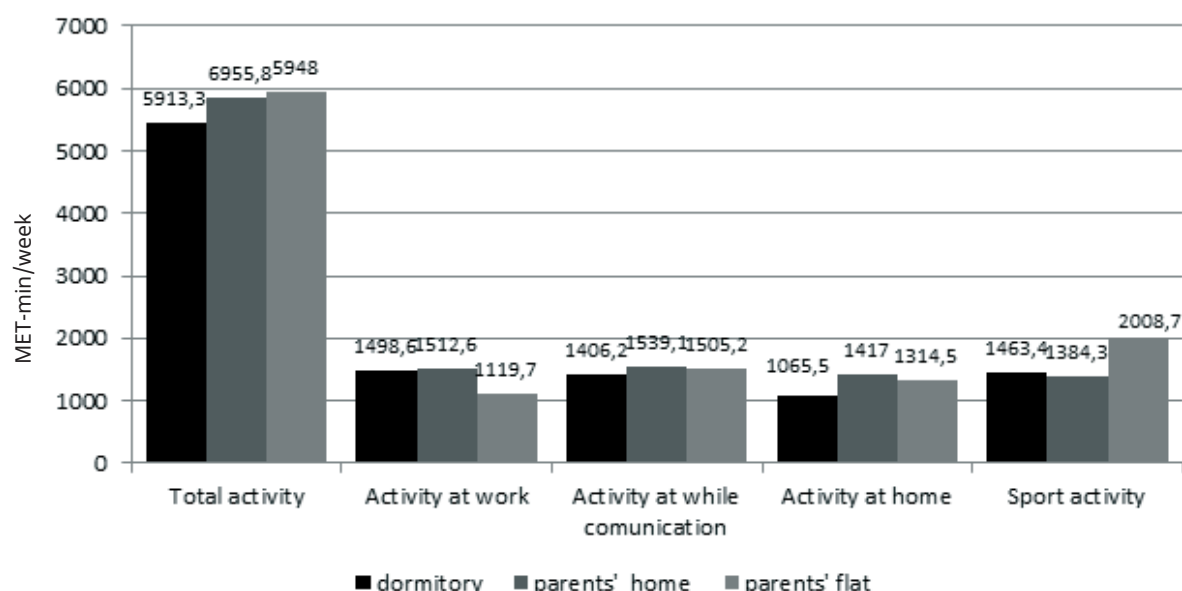


Figure 3. The level and areas of physical activity of the female students with regard to the place of residence

Table 2. The differentiation of the level and areas of physical activity of the female students with regard to the place of residence

Physical activity Type	Kruskal-Wallis Test		
	H	p	Differentiation
Total activity	0,32	0,8505	-
Activity at work	0,58	0,7477	-
Activity while commuting	0,11	0,9484	-
Activity at home	2,03	0,3616	-
Sport activity	5,14	0,0767	-

ting data on a large number of respondents (national and international research) regardless of their sex, age or health [29].

Conclusions

The female students of medical university are characterized by high level of total physical activity compared with the male students.

The highest level of total physical activity prevails in the second-year female students.

The place of residence during the studies (dormitory, family house or apartment) does not differentiate significantly the level of physical activity of the female students.

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