

## FEMALE STUDENTS AT HIGHER EDUCATIONAL INSTITUTIONS IN UKRAINE AND THEIR LEVEL OF PHYSICAL ACTIVITY

### STUDENTKI UCZELNI UKRAIŃSKICH A ICH POZIOM AKTYWNOŚCI FIZYCZNEJ

Anatolii Tsos<sup>1(A,C,D,E)</sup>, Olha Kasarda<sup>1(B,C,F)</sup>, Vasyl Pantik<sup>1(B,F)</sup>

<sup>1</sup>Lesya Ukrainka Eastern European National University, Lutsk, Ukraine

#### Authors' contribution

Wkład autorów:

- A. Study design/planning  
zaplanowanie badań
- B. Data collection/entry  
zebranie danych
- C. Data analysis/statistics  
dane – analiza i statystyki
- D. Data interpretation  
interpretacja danych
- E. Preparation of manuscript  
przygotowanie artykułu
- F. Literature analysis/search  
wyszukiwanie i analiza literatury
- G. Funds collection  
zebranie funduszy

Tables: 3

Figures: 2

References: 14

Submitted: 2017 Jul 19

Accepted: 2017 Aug 31

#### Summary

**Background.** Physical activity is a vital component of one's lifestyle. Therefore, it should be properly diagnosed in students, the future social elites.

**Material and methods.** The study was conducted in 2013 and involved 308 students of Lesya Ukrainka East European National University in Lutsk. The research method was an International Physical Activity Questionnaire (IPAQ-S) supplemented with own questions.

**Results.** The study has shown that only 4.5% of Ukrainian students demonstrate a high level of physical activity, 22.1% – average and as many as 73.4% – low. The course of study is not relevant to one's level of physical activity. Further, it turns out that in subsequent years of study, there is a visible increase in the number of females demonstrating low physical activity. Finally, students from large cities as well as those living in private houses show a higher level of activity.

**Conclusions.** The knowledge on physical activity in students should be taken into account in the didactic process at university.

**Keywords:** physical activity, IPAQ-S, female students

#### Streszczenie

**Wprowadzenie.** Aktywność fizyczna to jedna z ważnych składowych stylu życia. Należy ją diagnozować wśród studentów jako przyszłych elit społeczeństw.

**Materiał i metody.** Badania przeprowadzono w 2013 r. wśród 308 studentów Wschodnioeuropejskiego Uniwersytetu Narodowego im. Łesi Ukrainki w Łucku. Metodą badań był Międzynarodowy Kwestionariusz Aktywności Fizycznej (IPAQ) w wersji krótkiej uzupełniony o autorskie pytania.

**Wyniki.** Badania wykazały, że tylko 4,5% studentów ukraińskich ma wysoki poziom aktywności fizycznej 22,1% średni i aż 73,4% niski. Kierunek studiów nie ma istotnego związku z poziomem aktywności fizycznej. Wzrost liczby kobiet o niskiej aktywności fizycznej występuje na starszych latach studiów. Studentki z dużych miast cechuje wyższy poziom aktywności fizycznej, podobnie u mieszkających w domach rodzinnych.

**Wnioski.** Znajomość niskiego stanu aktywności fizycznej studentek winna być wykorzystana w procesie dydaktycznym w uczelni.

**Słowa kluczowe:** aktywność fizyczna, IPAQ, studentki

#### Introduction

The state of human health is an integral indicator of a society's well-being and the quality of life of its population. Research [1,2] shows that lifestyle is the main factor in the optimal development of systems and functions of the body and human health. An integral component of students' healthy lifestyle is the proper level of physical activity (a natural biological need, determined by the set of movements that a person performs in during his/her life) [3,4,5]. Therefore, the importance of activity for the human body, its interconnection with youth's physical condition as well as its daily and weekly volumes in different groups of population are often discussed in scientific works [6,7,8,9,10]. It has been proved that physical activity fulfils the role of a peculiar regulator in the development of an organism and is a necessary condition for the formation and perfection of man as a biological being and citizen.

As works and findings by Zemska [11], Lohinov [12], Bergier et al. [13,14] indicate, students in higher educational institutions tend to decrease physical activity with time, which requires additional research.

Tsos A, Kasarda O, Pantik V. Female students at higher educational institutions in Ukraine and their level of physical activity. *Health Problems of Civilization*. 2017; 11(3): 158-162. doi: 10.5114/hpc.2017.70004.

**Address for correspondence / Adres korespondencyjny:** Anatolii Tsos, Lesya Ukrainka Eastern European National University, 43025, 13 Volya Avenue, Lutsk, Ukraine, e-mail: post@eenu.edu.ua, phone: +380 332 720 123

Copyright: © 2017 Pope John Paul II State School of Higher Education in Biała Podlaska, Anatolii Tsos, Olha Kasarda, Vasyl Pantik. This is an Open Access journal, all articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License (<http://creativecommons.org/licenses/by-nc-sa/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material, provided the original work is properly cited and states its license.

## Material and methods

To determine the amount and quality of physical activity in female students, the International Physical Activity Questionnaire (IPAQ) was used. The questionnaire contains a set of questions on intensity and duration of physical exertion at work, at home and during leisure time. The overall assessment of physical activity for a week is given in MET (metabolic index). According to the approved recommendations on the development and analysis of the results of the survey, three levels of physical activity were distinguished: high, average and low.

In general, 308 female students in the 1-4 years of study in Lesya Ukrainka Eastern European National University (Luts'k, Ukraine) participated in our research. The first-year students constituted 26% of the respondents, the second – 24.3%, the third – 22.4% and the fourth – 27.3%. Details on the student groups with regard to their field of study are given in Table 1.

**Table 1.** Distribution of students by the year of study

| Year of study | N   | %    |
|---------------|-----|------|
| 1             | 80  | 26.0 |
| 2             | 75  | 24.3 |
| 3             | 69  | 22.4 |
| 4             | 84  | 27.3 |
| $\Sigma$      | 308 | 100  |

The research involved female students of the Pedagogical Faculty (28.9%), Faculty of International Relations (20.8%), Faculty of Psychology (19.5%), Faculty of Geography (18.2%), and Faculty of Foreign Philology (12.7%) (table 2).

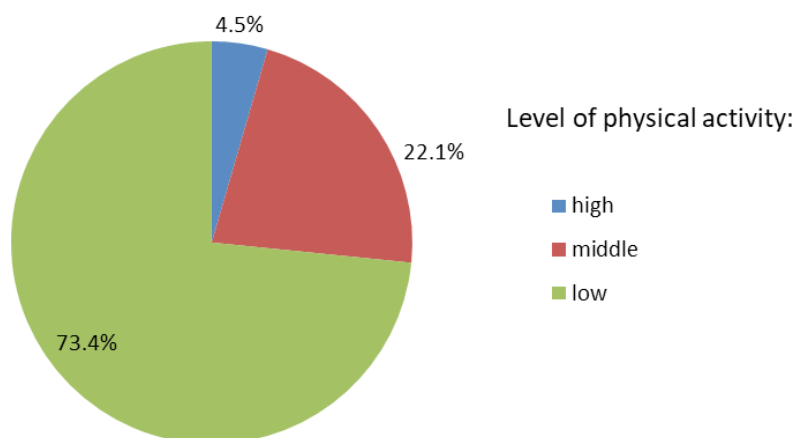
**Table 2.** Distribution of female students with regard to the course of study

| Course of study         | Overall | Year of study |      |    |      |    |      |    |      |
|-------------------------|---------|---------------|------|----|------|----|------|----|------|
|                         |         | 1             |      | 2  |      | 3  |      | 4  |      |
|                         |         | n             | %    | n  | %    | N  | %    | n  | %    |
| Foreign Philology       | 39      | 10            | 12.5 | 9  | 12.0 | 8  | 11.6 | 12 | 14.3 |
| Psychology              | 60      | 17            | 21.3 | 15 | 20.0 | 13 | 18.9 | 15 | 17.9 |
| Primary education       | 89      | 22            | 27.5 | 23 | 30.7 | 21 | 30.4 | 23 | 27.4 |
| Geography               | 56      | 14            | 17.5 | 13 | 17.3 | 13 | 18.8 | 16 | 19.0 |
| International Relations | 64      | 17            | 21.2 | 15 | 20.0 | 14 | 20.3 | 18 | 21.4 |
| $\Sigma$                | 308     | 80            | 100  | 75 | 100  | 69 | 100  | 84 | 100  |

The results of the study showed that 25.0% of the surveyed girls were born in big cities, 19.81% – in small cities, 8.1% – in towns, 14.9% – in urban-type settlements and 32.1% – in the countryside. 42.2% of the female students lived in rented apartments while studying at the university, 31.4% – in the dormitory and 24.3% – at home (with their parents). Thus, with regard to the sample and its proportions, it can be argued that practically equal numbers of students of different fields and courses are presented. In addition, the percentage distribution of students within one specialty showed a relatively equal correlation between the courses of study. Everyone who was involved into the research agreed to participate and agreed to the processing of the received information in the subsequent stages of the research.

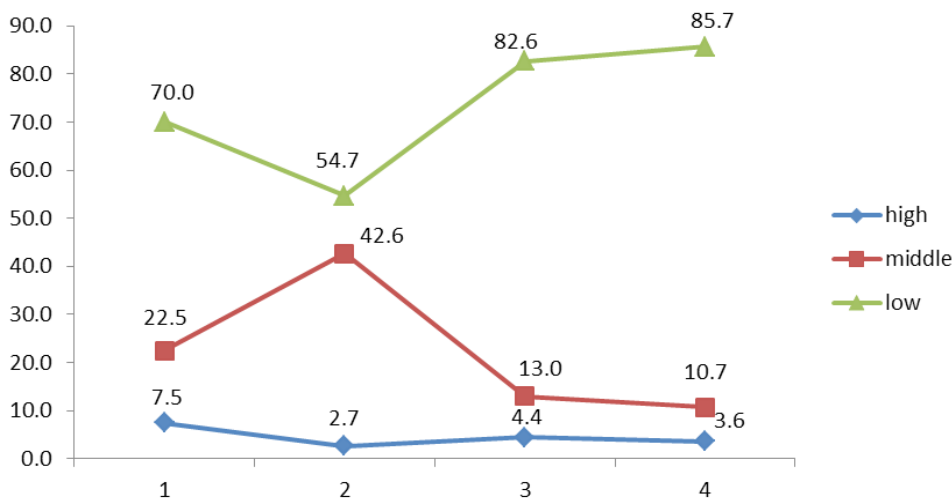
## Results

The results of the questionnaire showed that 4.5% of the female students demonstrated a high level of physical activity, 22.1% – average and 73.4% – low (Figure 1).



**Figure 1.** Distribution of female students with regard to the level of physical activity, %

While analyzing the obtained data, one may trace the dynamics of physical activity of girls during the four years of study at the university (Figure. 2). In general, girls tend to reduce the level of their physical activity after the second year. It was also found that a high level of activity is most visible among freshmen (7.5%). As for the sophomores, there are fewer of them, i.e. 2.7%, but, at the same time, this group are most involved in physical activity as 42.6% represent the average level of activity. As for the low level of physical activity, it is most visible among the fourth year students (85.7%), who are followed by students in the second year (54.7%).



**Figure 2.** Dynamics of the level of physical activity in female students with regard to the course of study, %

We also studied the level of physical activity in students with regard to the place of birth (Table 3) and the place of residence (Table 4).

**Table 3.** Distribution of female students with regard to the level of physical activity and place of birth

| Place of birth        | Level of physical activity |     |         |      |     |      |
|-----------------------|----------------------------|-----|---------|------|-----|------|
|                       | high                       |     | average |      | low |      |
|                       | n                          | %   | n       | %    | n   | %    |
| Big city              | 7                          | 9.1 | 28      | 36.4 | 42  | 54.5 |
| Small city            | 1                          | 1.6 | 14      | 23.0 | 46  | 75.4 |
| Town                  | 0                          | -   | 4       | 16.0 | 21  | 84.0 |
| Urban-type settlement | 2                          | 4.3 | 5       | 10.9 | 39  | 84.8 |
| Village               | 4                          | 4.0 | 17      | 17.2 | 78  | 78.8 |

**Table 4.** Distribution of female students with regard to the level of physical activity and place of residence

| Place of residence | Level of physical activity |      |          |      |          |      |
|--------------------|----------------------------|------|----------|------|----------|------|
|                    | high                       |      | average  |      | low      |      |
|                    | <i>n</i>                   | %    | <i>n</i> | %    | <i>n</i> | %    |
| Own accommodation  | 8                          | 10.7 | 30       | 40.0 | 37       | 49.3 |
| Rented apartment   | 4                          | 3.1  | 20       | 15.4 | 106      | 81.5 |
| Dormitory          | 2                          | 1.9  | 18       | 17.5 | 83       | 80.6 |

## Discussion

While studying the amount of physical activity in female students, we also focused on the respondents' courses of study. We found out that students with a low level of physical activity represent all fields. Furthermore, there are fewer girls who lead an active lifestyle.

Summarizing the results, we wish to indicate that those demonstrating a high level of physical activity are consistently in minority throughout the years of study. A sharp decrease in the number of students showing a low level of physical activity during the second year was due to an increase of those who demonstrated an average level of activity, which might be explained by changes in students' living conditions and their lifestyle. An increase in female students with low levels of physical activity is evidenced in the third and fourth years of study.

We also analyzed in detail the impact of two other factors on students' physical activity, i.e. the field and course of study. There was no significant correlation between the courses and the level of daily activity. However, certain changes in the level of physical activity were observed depending on the year of study.

The factors that affect the average level of physical activity most include: the students' place of birth and place of residence. The largest number of people demonstrating a high level of physical activity seem to have resulted from their place where they were born, especially large cities (9.1%). Among the students who were born in small towns, there was not even one who would show a high level of activity. As for the average level of physical activity, the largest proportion of students who were classified in this group came from large cities (36.4%), and fewest – from urban-type settlements (10.9%). The low level of physical activity is most evident in students from urban-type settlements and small towns (84.8% and 84.0% respectively). At the same time, there are fewer sedentary female students among those born in large cities (54.5%).

As for the place of residence, the distribution of female students according to the level of physical activity they represent can be summarised as follows: a high level of physical activity (10.7%) was evidenced in those female students who live in their own homes; that is, those who did not change their place of residence while entering the university. There are fewer students representing a high level of activity (1.9%) in females residing in dormitories. The average level of physical activity is most evident in those females who live in their own homes (40%). On the other hand, those living in rented apartments (81.5%) mostly demonstrated low level of physical activity.

## Conclusions

The questionnaire's findings indicate that only 4.5% of the surveyed female students demonstrate a high level of physical activity, 22.1% – average and 73.4% – low. The chosen course of study does not significantly affect young people's level of activity. The third and fourth years of study show a significant increase in those respondents who are least active.

The biggest number of female active students demonstrating a high level of physical activity were born in large cities. Those who came from urban-type settlements and small towns (84.8% and 84.0% respectively) represented low levels of activity. Finally, high level of physical activity were evidenced in females who lived in their own homes; that is, those who they did not change their place of residence on entering the university.

## References:

1. Rovnyi AS, Rovnyi VA, Rovna O.O. Fiziolohiya Rukhovoyi Aktyvnosti. Khar'kov; 2014 (in Ukrainian).
2. Tsos A, Homych A, Sabirov O. The state of physical and psychological components of health in the quality of life of the university students. *Human and Health*. 2013; 7(2): 8-12.
3. Byelikova N, Indyka S. Organization of Volunteer Health-saving Activity of Future Specialists in Physical Education and Sport. *Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві*. 2016; 1: 29-33.

4. Krutsevych TY, Bezverhnya HV. Rekreatsiya u fizychniy kul'turi riznykh hrup naseleण्या. K. : Olimp. l-ra; 2010.
5. Tsos A. Rukhova aktyvnist' u motyvatsiyno-tsinnisnykh oriyentatsiyakh studentiv. In: Tsos A, Shevchuk A, Kasarda O. Fizychnye Vykhovannya, Sport i Kul'tura Zdorovya u Suchasnomu Suspil'stvi: zb. nauk. pr. Skhidnoyevrop. nats. un-tu im. Lesi Ukrayinky. Lutsk: Skhidnoyevrop. nats. un-t im. Lesi Ukrayinky, 2014 ; 4(28): 83–87 (in Ukrainian).
6. Kovtyn A. Rukhova aktyvnist' studentok vyshchyykh navchal'nykh zakladiv. Moloda Sportyvna Nauka Ukrayiny. 2015. 19(2): 105–108 (in Ukrainian).
7. Sabirov O, Pantik V, Hats H. Stan fizychnoho rozvytku studentiv vyshchyykh navchal'nykh zakladiv. Fizychnye vykhovannya, sport i kul'tura zdorovya u suchasnomu suspil'stvi: zb. nauk. pr. Skhidnoyevrop. nats. un-tu im. Lesi Ukrayinky. Lutsk : Skhidnoyevrop. nats. un-t im. Lesi Ukrayinky, 2016; 3(35): 60–65.
8. Bergier J, Bergier B, Niżnikowska E, Junger J, Pongrác A, Frömel K, et al. The diversity of the place of residence of students and their level of physical activity. *Central European Journal of Sport Sciences and Medicine*, 2016; 13(1): 123-132.
9. Stępień E, Bergier B, Niżnikowska E, Bergier J. Selected factors differentiating the forms of physical activity taken up or expected by the students of PSW in Biała Podlaska. *Central European Journal of Sport Sciences and Medicine*. 2015; 10(2): 87- 94.
10. Tsos A, Sushchenko L, Bielikova N, Indyka S. Influence of working out at home on the expansion of cardiovascular disease risk factors. *Journal of Physical Education and Sport*. 2016, 16(3): 1008–1011.
11. Zemska N. Kharakterystyka rukhovoyi aktyvnosti students'koyi molodi. *Fizychnye vykhovannya, sport i kul'tura zdorovya u suchasnomu suspil'stvi: Zbirnyk Naukovykh Prats'*. 2012. 3(19): 211–215 (in Ukrainian).
12. Lohinov SI. Fyzycheskaya aktyvnost' studentov dvukh vuzov horoda Surhuta po dannym mezhdunarodnoho oprosnyka IPAQ. *Teoryya y Praktyka Fyz. Kul'tury*, 2015; 9: 83-85 (in Ukrainian).
13. Bergier J, Bergier B, Tsos A. Physical activity and sedentary lifestyle of female students from Ukraine. *Human and Health*. 2012; 7(2): 131-137.
14. Bergier J, Bergier B, Tsos A. Place of residence as a factor differentiating physical activity in the life style of Ukrainian students. *Annals of Agricultural and Environmental Medicine*. 2016; 23(4): 549–552.