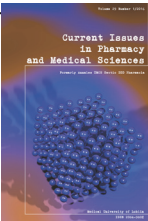
	<p><b>DE GRUYTER</b> OPEN</p> <p><b>Current Issues in Pharmacy and Medical Sciences</b></p> <p>Formerly ANNALES UNIVERSITATIS MARIAE CURIE-SKŁODOWSKA, SECTIO DDD, PHARMACIA</p> <p>journal homepage: <a href="http://www.curipms.umlub.pl/">http://www.curipms.umlub.pl/</a></p>	
---	---	---

## The relationship between the physical activity of students from Lublin's universities, and video games

ANDRZEJ POLSKI<sup>1\*</sup>, KAROL IWANIAK<sup>1</sup>, KAROLINA SOBOTKA-POLSKA<sup>2</sup>,  
MAGDALENA ROGOWSKA<sup>1</sup>, EWA POLESZAK<sup>1</sup>

<sup>1</sup> Chair and Department of Applied Pharmacy, Faculty of Pharmacy, Medical University of Lublin, 1 Chodzki, 20-093, Lublin, Poland

<sup>2</sup> Chair and Department of Organic Chemistry, Faculty of Pharmacy, Medical University of Lublin, 4a Chodzki, 20-093, Lublin, Poland

### ARTICLE INFO

Received 08 October 2015  
Accepted 08 December 2015

#### Keywords:

physical activity,  
computer games,  
students.

### ABSTRACT

With the rapid development of computer technology, gaming has become more popular, and young people spend more and more time playing such games. It is thought that this a major factor responsible for the lowered physical activity of today's society. For a better understanding of the issue, we assessed how many students spend their free time playing video games, and how this form of recreation affects their levels of physical activity. The investigation of the relationship between physical activity and playing computer games was undertaken via a questionnaire containing 16 questions, and this was applied to a representative sample of 138 students drawn from Lublin's universities. The results of this show that males are more physically active (85% compared to 75% women). However, only 9% men and 13% women train every day. To keep the body in shape, the most common activity for the respondents is aerobics training (approx. 30%), walking and cycling. Such exercise is performed to improve or keep in shape, and as a form of relaxation. However, one third of all respondents play video games, 70% of these are males and only 16% are females. What is more, our results show that there was no correlation between level of physical activity and gaming. In both groups, about 80% of all respondents are physically active. Yet, among the players, there are more overweight people (28%), as compared to 10% in the non-player group. Still, players, in contrast to popular opinion, are more active than non-playing people. No association was found between playing computer games and health problems.

### INTRODUCTION

Physical activity is popular in Europe, mainly because of the beneficial effects on health. Nearly three quarters of all EU citizens at a young age (children and adolescents under 18 years) are physically active [2]. However, nowadays, young people choose to play video games more often instead of undertaking more active forms of recreation, especially that done in fresh air. In the case of adults, the situation seems to be worse. Lisowska [7] observed that, in Poland, only about 7% of all adults plays sport at a satisfactory level. This figure is associated with lifestyle changes (driving cars, using phones and other goods) which reduced the need to travel on foot. Moreover, people are often occupied with the sedentary observation of mass media (television, internet, etc.) [1]. Excessive gaming is a relatively new issue, but very often leads to an addiction which is similar to a gambling

addiction [6]. What is more, with regard to physical health, research shows that prolonged computer use may cause skeletal muscle discomfort or vision problems [5].

The purpose of the study was to evaluate the relationship between physical activity and gaming. The aim was also to determine the correlation between physical activity or gaming with gender, weight (using BMI) and health problems.

### MATERIAL AND METHODS

The survey was anonymous. It was filled in by way of the traditional forms of paper, as well as by accessing a web site. In this study, a representative group of 138 (n = 138) students from Lublin's universities took part. Of the participants, 66.7% (n = 92) were women, and 33.3% (n = 46) were men. The survey was conducted in March and April 2014, using the questionnaire method of diagnostic

#### \* Corresponding author

e-mail: [andrzej.polski@umlub.pl](mailto:andrzej.polski@umlub.pl)

survey. The survey was divided into questions about the respondent, the type and intensity of the exercises performed, the play of computer games, and the occurrence of symptoms associated with them. Statistical methods were used that were appropriate to those incorporated in the assembled material measurement scales. These included statistical data quantity and rates and median. Basic Statistics and multi-way tables were then employed to assess the relationship between variables. This part of the study was conducted via the non-parametric test Pearson chi-square ( $\chi^2$ ).

To achieve the objective of this research, the respondents were asked the following questions:

1. Are you active?
2. What exercises do you do?
3. How often do you exercise?
4. What is your motivation to train?
5. What other measures do you take in order to maintain a healthy weight?
6. Do you have any vision problems?
7. How do you take care of your eyes?
8. How often do you feel back pain?
9. What do you use in case of back pain?
10. Do you play video games?
11. What platforms do you play?
12. How often do you play games?
13. How often do you play motion games?
14. Do you think that motion games can be an active way of spending time?
15. Questions about gender, height and weight.

## RESULTS

The study shows that among students, men are slightly more active than women (85% of men vs. 75% of women), however, such results were not statistically significant ( $\chi^2 = 7.475$ ,  $df = 4$ ,  $p = 0.1128$ ). Figure 1 shows that among the active people, only 13% of all women and 9% of all men train every day. Figure 2 reveals that women prefer walking, aerobics/fitness and cycling, while men give priority to team games, gym activities and cycling. Such results were statistically significant ( $\chi^2 = 50.41$ ,  $df = 8$ ,  $p < 0.0001$ ). Figure 3 demonstrates that both sexes exercise in order to be in good shape (33% females, 27% males) and to relax (31% females, 29% males). The taking care of health as a stimulus for an active lifestyle was selected only by one third, whereas 22% of all men and 11% of all women train to improve their health. These results were not statistically significant ( $\chi^2 = 7.495$ ,  $df = 6$ ,  $p = 0.2775$ ).

In Figure 4, a clear correlation between the gender of the respondents and gaming is presented. Among the respondents in both sexes, 34% of all respondents play video games. Among women, there are only 16% of the total that are players, while among men, there are up to 70% of the total who are active players. At the same time, more than half of the players play motion games on consoles. However, there was no relationship between gaming and physical activity. Approximately 80% of both players and non-players are active. These results were statistically significant ( $\chi^2 = 67.45$ ,  $df = 4$ ,  $p < 0.0001$ ).

Among respondents who play computer games at least once a week, 20% are people who regularly experience back pain and 28% of them have vision problems. In addition, 23% of all gamers are people who are overweight. Among non-players, 32% regularly suffer from back pain, while 39% have eye problems and 10% are overweight.

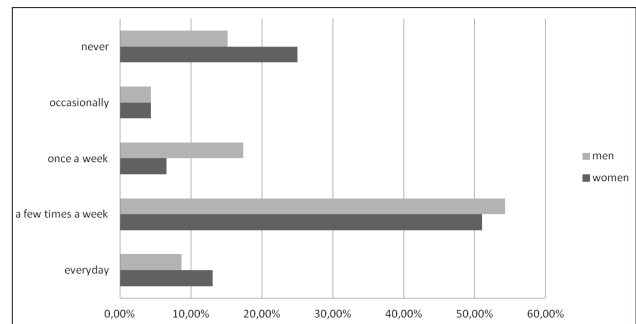


Figure 1. "How often do you exercise?" ( $\chi^2=7,475$ ,  $df=4$ ,  $p=0,1128$  – no significance)

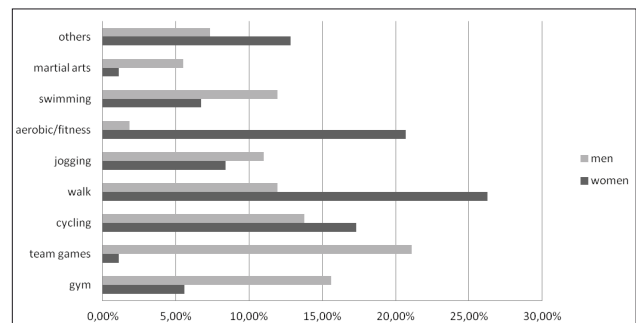


Figure 2. "What exercises do you do?" ( $\chi^2=50,41$ ,  $df=8$ ,  $p<0,0001$  – significant)

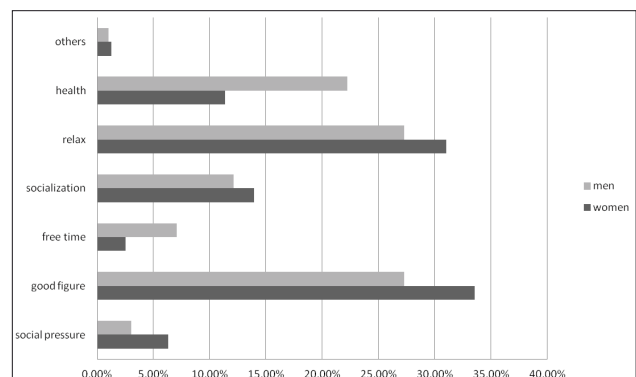


Figure 3. "What is your motivation to train?" ( $\chi^2=7,495$ ,  $df=6$ ,  $p=0,2775$  - no significance)

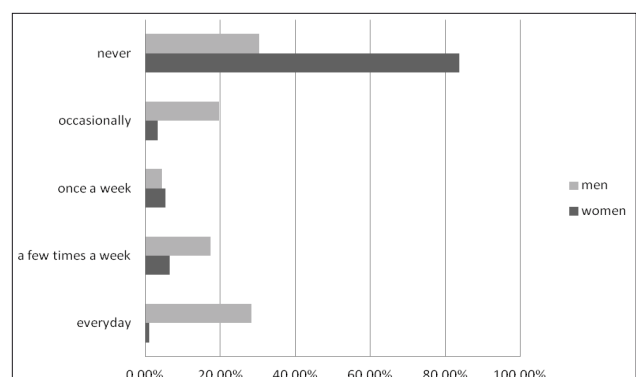


Figure 4. "How often do you play games?" ( $\chi^2=67,45$ ,  $df=4$ ,  $p<0,0001$  – significant)

## DISCUSSION

Based on the collected material, it can be said that high levels of physical activity among students (approx. 80%) was observed. Almost 2/3 of them train a few times a week. Women are less active (75% to 85%) than are men, however, but if they already train, they do it more often than do men. Similar results (that 45.4% of all active people train at least 2-3 times a week) have been observed by Niźnikowska [8], who studied the physical activity of students in Biała Podlaska. What is more, like results (approx. 50%) were obtained by Florkiewicz [3], who surveyed the students of the Institute of Physical Culture in Szczecin. In our work, frequently selected forms of physical activity among women are walking and fitness, whereas men prefer team sports and activities in the gym. Similar results were observed Niźnikowska [8] – 26.8% walk, 14.9% do cycling and 12.7% swimming. This shows that students choose the more easy available and not too intensive activities. Interestingly, most people play sport in order to improve their body shape (approx. 30%) and to relax, not for health (22% of men and 11% women). Perhaps this is related to the fact that young people are rarely troubled by problems arising from the lack of physical activity. The results do not differ from studies observed by other authors [7,8]. On the other hand, Gorner *et al.* [4] observed that almost 43% of all young people in Poland did not undertake any physical activity. Among those who exercised, the most popular were: jogging, cycling and team games (each in the range of 10-15%). Only 18% of his respondents had enough exercise for their age.

The hypothesis that the majority of game players are men (70%) was confirmed. However, the overwhelming number of people playing games are also physically active (approx. 80%). Nevertheless, they frequently are overweight, as compared to non-players (23% to 10%).

Interestingly, back pain (20% to 32%) or vision problems (28% to 39%) are less commonly observed among game players. These surprising results may be due to the young age of the respondents, and these results require further study involving a larger group of participants.

## CONCLUSIONS

1. The most common activities undertaken by the students from Lublin's universities were walking, fitness, cycling, team sports and gym.
2. They practice such activities in order to improve/maintain body shape, for relaxation and health.
3. Far more men are playing video games.
4. Players also are often active.
5. There was no correlation between playing video/computer games, physical activity and feeling back pain or vision problems.

## REFERENCES

1. Bielski J.: Aktywność fizyczna ucznia w czasie wolnym. *Lider*, nr 1, 7, 2010.
2. Eurobarometr 72.3: Sport i aktywność fizyczna. *Badanie specjalne Eurobarometru nr 3.334 /Seria badawcza 72.3 TNS Opinion & Social 2010.*
3. Florkiewicz B.: Aktywność ruchowa studentów Instytutu Kultury Fizycznej. In: Aktywność ruchowa ludzi w różnym wieku. Szczecin. Umiastowska D. (editor), PTNKF, Uniwersytet Szczeciński, 8, 42, 2008.
4. Gorner K., et al.: Aktywność fizyczna młodzieży w czasie wolnym na tle wybranych uwarunkowań. *J. Health Sci.*, 4 (13): 266, 2014.
5. Kanitkar K.: The ever-increasing hours spent in front of video display terminals have led to a corresponding increase in visual and physical ills. *Review of Ophthalmology E-Newsletter*, 12, 4, 2005.
6. Karamuz J.: *Internet jako narzędzie archeologii*. Praca magisterska. Uniwersytet Kardynała Stefana Wyszyńskiego, Warszawa, 47, 2003.
7. Lisowska J. (2006), *Rekreacja ruchowa osób dorosłych*. In: Zarys teorii rekreacji ruchowej. Dąbrowski A. (editor). Druktur, Warszawa, p. 90.
8. Niźnikowska E.: Typ i rok studiów a aktywność fizyczna studentów państwowej szkoły wyższej w Białej Podlaskiej. *Człowiek i Zdrowie*, VI(1), 144, 2012.