

PHYSICAL ACTIVITY OF OLDER ADULTS FROM THE UNIVERSITY OF THE THIRD AGE

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- physical activity,
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- the University of the Third Age.

Abstract:

The aim of the study was to measure physical activity and to compare the results to the tables containing the standards for the 60+ age group. The short version of the International Physical Activity Questionnaire (IPAQ), containing 7 questions about the last week's activity was used to examine the physical fitness. The results of the study showed that older adults are characterized by a sufficient level of physical activity.

INTRODUCTION

Physical activity is critical to the health status of each human. At the post-working age, its effect is also very important. Numerous studies have demonstrated that regular involvement of older adults in any form of the physical activity has a very good effect on neuromuscular coordination and physical capacity. Drabik argued that the concept of physical activity represents both physical movement and lifestyles [Drabik J.1996]. According to Kozłowski and Nazar, physical activity is a form of human body's work, and, more specifically, the muscles that build the body. This work is defined as physical exercise [Kozłowski S., Nazar K.1984]

Przewęda considers physical activity as a muscular effort that leads to a number of changes that elevate energy consumption [Przewęda R.1999]

Physical activity is needed by each person over the whole lifetime rather than being restricted only to the youth [Kielbasiewicz-Drozdowska I., Siwiński W.2001].

The old age is inevitable for all people. The greater number of older adults in the general population is caused by increased life expectancy, population decline resulting from the lower birth rates and the development of medicine which introduces more methods to combat illnesses. The main life determinant is genetic factors. The speed and quality of ageing is affected by the external actors and illnesses the person has experienced, poor nutrition, bone fractures and injuries, unhealthy lifestyles, polluted air at the workplace, poor working conditions. People can have a substantial effect on slowing down the ageing process through regular physical activity, healthy diets and not using stimulants. It is important to emphasize that, for example, going by bus to a shop or a pharmacy should be at the older age replaced by going by bicycle or a walk. Physical activity that results from everyday activity has a substantial effect on improvement in the quality of life at older age. Lifestyle is understood to mean everyday behavior of an individual that has an effect on their life quality [Siciński A.1976].

Wojnarowska defined four factors affecting human health: lifestyle, environment, human biology (genetics) and organization of medical care [Wojnarowska B.2012].

The people who promote healthy lifestyles, such as doctors and dietitians, demonstrate that physical activity is essential to the improvement in the health status (both physical and mental), functional fitness, reduced risk of many illnesses and enhances immunity and

physical capacity. Adequate level of physical activity helps older people remain independent until the final years of life and improve the quality of life and level of activity in society.

Adequate monitoring of older adults' physical activity (PA) is essential to develop effective health promotion programs [Van Holle V., De Bourdeaudhuij I., Deforche B., Van Cauwenberg J., Van Dyck D. 2015].

The World Health Organization (WHO) and the EU recommend elderly people taking moderate physical activity for at least 30 minutes 5 days a week, or very intense physical activity for at least 20 minutes for 3 days a week. Also recommend performing 2-3 times a week exercise to increase muscle strength and endurance. Of great importance for this group have weight training and exercises to improve coordination, which helps prevent falls (European Union 2008).

The old age affects each person and no one can stop it, but we all can influence the length of our lives [Osiński W. 2003],

STUDY AIM, MATERIAL AND METHODS

The aim of the present study was to obtain information about the level of physical activity in older adults who participate in the University of the Third Age in the Stanisław Tarnowski State Higher Vocational School in Tarnobrzeg.

The study examined 52 people (33 women and 19 men) who participated in the sport and rehabilitation classes in March and April 2015.

The measurements of physical activity of the older adults from the University of the Third Age program were based on the method of the diagnostic survey using the short version of the International Physical Activity Questionnaire (IPAQ) containing 7 questions about the last week [Biernat E., Stupnicki R, Gajewski A, 2007]

MET values:

- Walking 3.3 METs
- Moderate intensity activities = 4.0 METs
- Vigorous intensity activities = 8.0 METs

The calculations were made based on the following formula:

$$\text{MET (min/week)} = W(\text{METs} \cdot \text{min} \cdot \text{number of days}) + \text{Moderate int. activ. (METs} \cdot \text{min} \cdot \text{number of days)} + \text{Int. activ. (METs} \cdot \text{min} \cdot \text{number of days)}$$

$$1 \text{ MET} = 3.5 \text{ ml O}_2/\text{kg body mass}/\text{min} = 1 \text{ kcal}/\text{kg}/\text{h} = 4.184 \text{ kJ}/\text{kg}/\text{h}$$

The statistical analysis used the SPSS STATISTICS 17.0 software.

The Chi square methodology was used to evaluate the relationships whereas the Mann-Whitney U-test was employed due to the low sample size.

The examinations were conducted in 2016 and the results represent a preliminary report (a pilot study) from the examinations in the area of the Subcarpathian Voivodeship.

Table 1. Gender

Gender	Number of participants	%
Women	33	63%
Men	19	37%
Total	52	100%

Table 2. Age of study participants

Age	Number of participants	%
63	11	21%
65	17	33%
67	18	35%
70	6	11%
Total	52	100%

Table 3. Place of residence of study participants

Age	City	%	Rural areas	%
63	8	19%	3	27%
65	13	32%	4	37%
67	15	37%	3	27%
70	5	12%	1	9%
Total	41	100%	11	100%

RESULTS

Level of the MET index for individual types of exercise

The results obtained in the study reveal that the highest mean was reached for the intensive activities (736 MET). The mean for moderate intensity activities was 570 MET, which was the lowest result. The mean obtained for walking was 666 MET. General means for all activities was 657 MET. With this result, the level of activity in the group can be considered as sufficient.

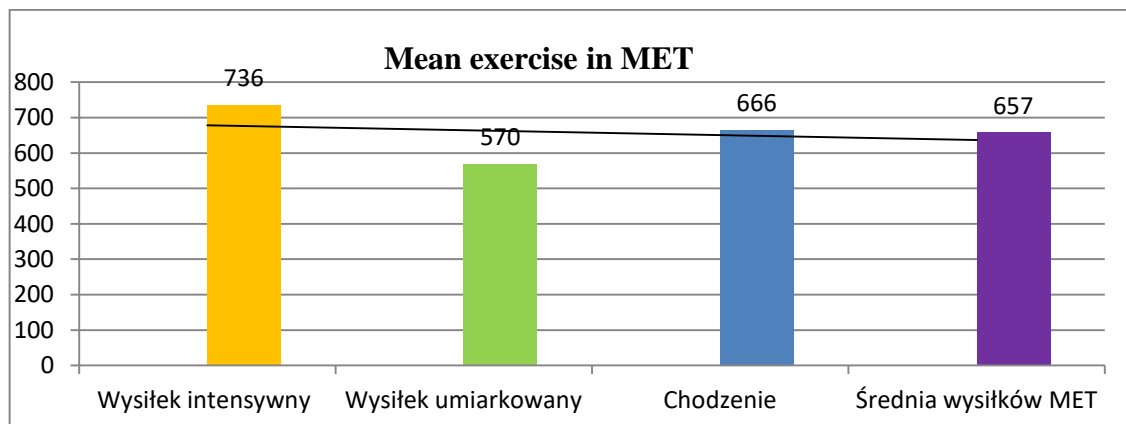


Diagram 1. Mean MET for individual types of exercise

(Wysilek intensywny – Vigorous-intensity activities, Wysilek umiarkowany – Moderate-intensity activities, Chodzenie – Walking, Średnia wysiłków MET – Mean exercise in MET)

Determination of the level of physical activity according to the three levels contained in the IPAQ method: insufficient (up to 600 MET), sufficient (from 601 to 1,500) and high (over 1,500 MET).

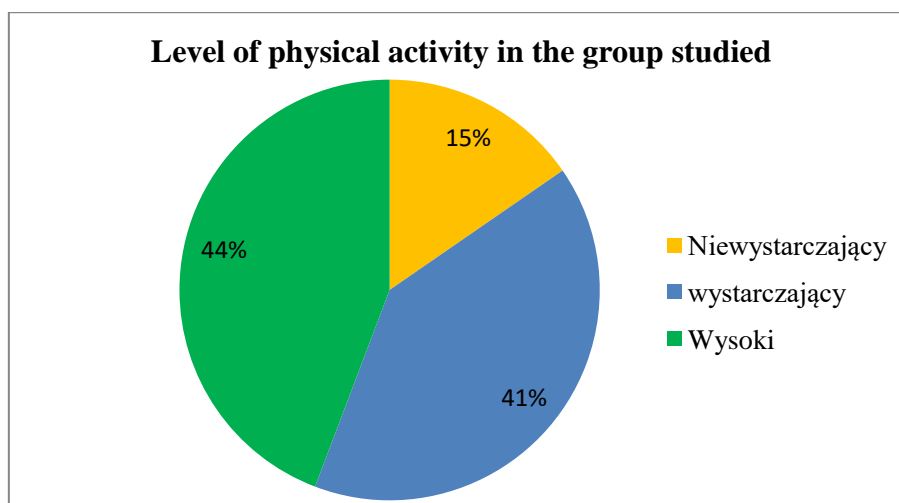


Diagram 2. Overall level of physical activity in the population studied

(Niewystarczający – Insufficient, wystarczający – Sufficient, Wysoki – High)

Results concerning the level of physical activity show that 15% (8 people) of study participants are characterized by insufficient level of physical activity, 41% - by sufficient level (21 people) and 44% - by high level of physical activity.

Table 4. Characteristics of physical activity of the study participants using descriptive statistics

Physical activity	women (N = 33)							men (N = 19)						
	\bar{x}	Me	s	c ₂₅	c ₇₅	min	max	\bar{x}	Me	s	c ₂₅	c ₇₅	min	max
Vigorous-intensity activities (MET)	362	0	459	0	960	0	1280	377	0	512	0	960	0	1280
Moderate-intensity activities (MET)	484	480	422	0	720	0	1080	651	480	367	480	1080	0	1080
Walking (MET)	774	990	354	528	990	297	1188	783	297	407	297	1089	0	1188

The statistical significance level was set at $p < 0.05$. This fact was marked *.

- N – number of participants;
- arithmetic mean: average level of the variable;
- median - half of the measurements have values lower than the median and half of them - greater than the median;
- the highest value (maximum) and lowest value (minimum);
- standard deviation (s) is the measure of "average" deviation from the mean value;
- 25th and 75th centile. - numbers that determine the level below (over) which every fourth (25%) of the lowest (highest) measurements can be found.

Analysis of the variation of the activity types revealed the lack of statistically significant differences between the levels of physical activity observed in women and men. All the test probability values p substantially exceeded the level of 0.05. High and sufficient activity was found in both women and men. The highest percentage value was found in the case of high level of physical activity, with greater levels reached by men.

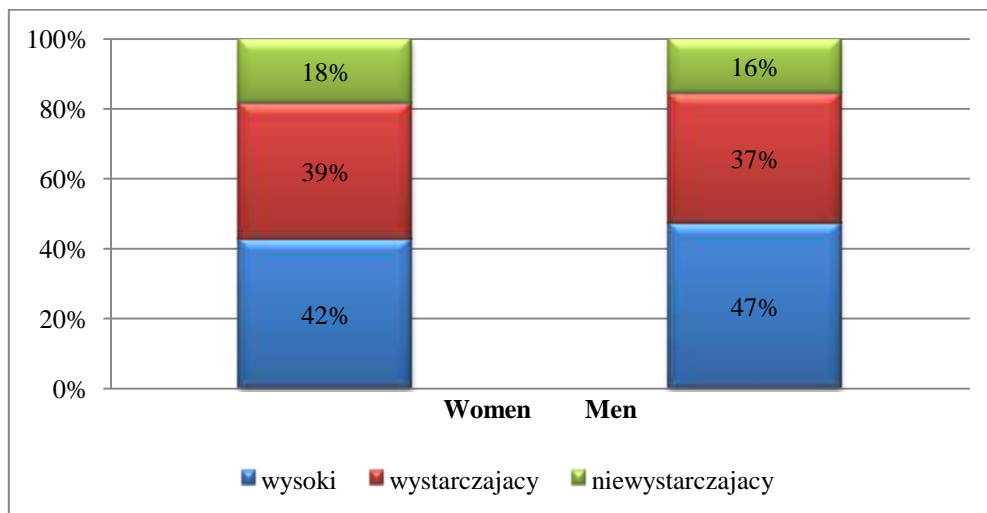


Diagram 3. Differentiation of the types of physical activity of older people with division into genders.

(Niewystarczający – Insufficient, wystarczający – Sufficient, Wysoki – High)

The pilot study demonstrated that the students from the University of the Third Age demonstrated high level of physical activity in 44%, sufficient level - in 41%, and insufficient - in 15%.

CONCLUSIONS

No statistically significant differences were found with respect to walking and moderate and vigorous-intensity activities represented by MET among women and men studied. All the test probability values p substantially exceeded the level of 0.05.

The type of exercise that was dominant in the study group was vigorous-intensity activities, which seems to be surprising in older adults.

This is such institutions as the University of the Third Age that help older adults consciously and constantly improve their level of physical activity. No correlations were found between the results and gender of study participants.

The findings of the study lead to the conclusions that:

1. Any form of physical activity started by older people has an effect on improvement in physical fitness and improvement in the health status and general well-being.
2. The places like the University of the Third Age help older adults be actively involved in various forms of physical activity. Their participation in such activities is characterized by high level of involvement.
3. Older adults who participate in the classes organized within the University of the Third Age are characterized by improved general well-being and functional fitness.
4. For the most of the study participants, the only form of physical activity is that resulting from everyday activities.

5. References

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