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Physical activity levels of people over 60

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Abstract

Introduction: Physical activity at any age brings numerous benefits. In youth, it strengthens and increases a person's overall physical fitness whereas in old age it improves well-being, inhibits the ageing process and sustains health. With systematic exercise it is possible to maintain physical fitness at a higher level compared to physically inactive people [1]. Physical activity is one of the factors that determines a person's state of health. Their ontogenesis is also a major element of a healthy lifestyle [2]. The human body was created for movement so, in order to function properly, it needs regular activities and physical exercise [3]. Regular physical activity influences the maintenance of functional fitness, independence and autonomy in performing daily activities in older age. Movement deficiency is a problem at any age, especially in seniors. Maintaining an active lifestyle among the elderly is a major component of successful ageing [4].

Aim of the study: The aim of the study was to assess the physical activity levels in people over 60 years old, and whether there is a correlation between sociodemographic factors, BMI and physical activity levels in the study group.

Material and method: The study was conducted remotely in July and August 2020 on people aged 60 and over. The study involved 77 people over 60 years of age: 63 women and 14 men. The research tool was the International Physical Activity Questionnaire (IPAQ). In the study group 69 people were aged 60-70 years and 8 people were aged 71-80 years.

Results: People over 60 years of age lead active lifestyles; seniors' physical activity is sufficient. BMI and socio-demographic factors do not affect the physical activity of older people.

Conclusions: The level of physical activity among the elderly covered by the study is sufficient. Sociodemographic factors and BMI do not determine the level of physical activity in the study group.

Keywords: physical activity, sociodemographic factors, BMI, older people.

Physical activity of older people in the ageing process

Lack of movement, or hypokinesia, eventually leads to a senior citizen’s functional incapacity, which worsens and perpetuates. In addition, reduced fitness significantly increases the risk of many diseases. Ischaemic heart disease very often results from inactivity and a sedentary lifestyle in older people [5]. In seniors, a sedentary lifestyle negatively affects the functioning of the body and its most systems. Physical inactivity impairs not only the cardiovascular system, but also the musculoskeletal system and the respiratory system. In addition, hypokinesia disrupts mineral metabolism and impairs glucose tolerance [6]. This pejorative phenomenon which is physical inactivity (hypokinesia) has been common since mid-twentieth century and it has affected negatively the health of the individual as well as the society. According to the World Health Organisation, hypokinesia has been recognised as a phenomenon of civilisation. It consists in a disproportion between the increase in the nervous system load and a simultaneous decrease in the musculoskeletal system load.

It has been noted that people who exercise regularly tend to sleep better, eat better, pay attention to their body weight, avoid stimulants, alcohol, do not smoke and even cope with stress better. It is worth noting that regular physical activity undertaken in conjunction with a properly selected diet as well as vitamin and mineral supplementation has a significant effect on increasing muscle functioning, strength and mass, and can even significantly slow down or stop muscle atrophy. In addition, the body of a person over 60 adapts to increased physical exertion. During the first period of participation in sports activities, a significant improvement in the psychological state of exercisers has already been observed, consequently, self-esteem increases, cognitive functions improve and anxiety levels decrease [7,8]. It is noteworthy that through physical activity memory, concentration and attention of older people develop. In addition, independent thinking and self-creative processes improve. Phenomena such as perception, feelings and sensations are also optimised in seniors [9].

In people over 60, regular physical exercise has an impact on their condition. Physical activity positively affects the course and presence of chronic diseases. Chronic diseases which seniors suffer with include: coronary heart disease, obesity, osteoporosis, hypertension and hypercholesterolaemia. Exercise can also be helpful in relieving pain in older people with musculoskeletal conditions. Another positive aspect of an active lifestyle is that it reduces the risk of diabetes in seniors as through exercise the sensitivity of cells to insulin is increased and consequently, glucose tolerance in the body is improved. Regular physical activity reduces the risk of infections and can also reduce the amount of medication taken [6].

The nature of physical exercise in people over 60 years of age should be preventive and therapeutic. Exercise activities in this group should be based on moderate, natural movement that will maintain the optimal physical condition of the senior [10]. It is nowadays known that the intensity and type of exercise in this age group should be individually adapted to the geriatric patient. Exercise is also dependent on the degree of fitness, health status and patient preferences. Despite this knowledge, general training recommendations for seniors have been established.

Regular training for an older person should include:

- endurance (aerobic) exercises - to improve aerobic capacity: swimming, walking, running, dancing, cycling;
- resistance (strength) exercises - the purpose of these is to strengthen muscle strength, you can use weights or thera-band bands;
- stretching exercises - these exercises are designed to improve flexibility and blood supply to the motor system;
- coordination and balance exercises - exercises are designed to develop locomotion and improve overall fitness [9].

Physical activity should accompany a person through all stages of life and should be appropriately adapted to the period of life in question. Any age is a good time to start regular physical activity, however, the earlier it is, the better the effect of prevention of diseases and the ageing process will be.

Regular physical activity for older people is primarily aimed at:

- health improvement;
- maintaining fitness and independence;
- improving mental state;
- the possibility of seniors' integration;
- filling their free time [11].

Physical activity is an essential part of successful ageing. In contrast, most seniors show a decline in physical activity. Physical activity is limited to activities of daily life such as cleaning, shopping, cooking and working. However, it is important to note that maintaining a high level of physical activity in older people is one of the prognostic factors for prolonging life. Physical activity also enables seniors to maintain their independence and autonomy, which significantly improves their quality of life [12]. The World Health Organisation (WHO) proposes the following rules that apply to physical activity among seniors:

- the nature of the activities should be individual or group;
- various types of exercise should be suggested during classes (aerobic exercise, relaxation, stretching);
- exercise should include forms of easy and moderate difficulty (cycling, swimming, gymnastics, dancing, walking);
- exercises should include endurance, balance and flexibility training;
- exercising in a senior group should be relaxing and fun;
- exercises should be carried out regularly [13].

There are very few absolute contraindications to regular exercise for seniors. These include, for example, high blood pressure, exercise-induced ventricular arrhythmias, an enlarging aortic aneurysm, mental illness and acute infections [9].

Material and methodology Characteristics of the study group

The study group consisted of 77 people. They were both women and men over 60 years of age. The research method used in the study was a diagnostic survey. The research was conducted in July and August 2020 among people aged 60 and over in a remote manner. The criteria for the selection of the study group were age over 60, voluntary participation in the study and an intellectual state that allowed the completion and understanding of the survey questionnaire.

Sixty-three women (82%) and 14 men (18%) participated in the study. The largest group was in the age range 60-70 years, 90% (n=69), and 10% (n=8) were in the age range 71-80 years. The majority of people surveyed 71% (n=61) were urban residents, 21% (n=16) were rural residents. More than half of the people surveyed 76% (n=59) described their financial situation as good, 12% (n=9) as very good and 12% (n=9) as bad. On the basis of BMI, the study showed that 44% (n=34) of the people surveyed were overweight, 27% (n=21) were first degree obese. Twenty-one per cent (n=16) were within the normal range, while eight per cent (n=6) were found to be obese to the second degree.

Research methodology

In order to obtain the results of the study, the International Physical Activity Questionnaire (IPAQ), which assesses the level of physical activity has been used. The unit expressed by the IPAQ is MET-min/week, which makes it much easier to classify the subjects into one of three groups. The questionnaire distinguishes between three activity categories:

- below 600 - insufficient;
- 600-1500 or 600-3000 - sufficient;
- above 1,500 or 3,000 - high.

The questionnaire is divided into a long and a short form. In the present study, a short questionnaire, which consists of 7 questions, has been used. The questions are related to physical activity in daily life, work and leisure. In the long form, as well as in the short form, only activities that last for 10 minutes continuously are taken into account. A self-administered survey questionnaire with 20 questions was used as another research tool. The creation of the self-administered questionnaire was aimed at obtaining socio-demographic data and the necessary information for the characterisation of the study group.

Findings

In the survey conducted, 56% of the respondents declared that they regularly undertook physical activity and 44% did not.

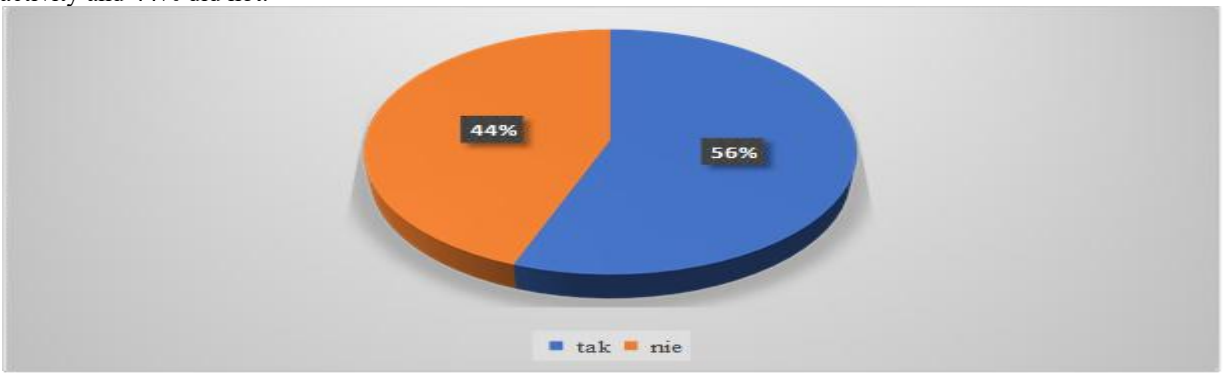

Chart 1. Regular activity undertaken by respondents

Our own research showed that the majority of respondents (45%) undertook physical activity 3-4 times a week, while 21% of respondents did not undertake any physical activity. In contrast, 17% of respondents declared that they undertook physical activity daily and once a month.

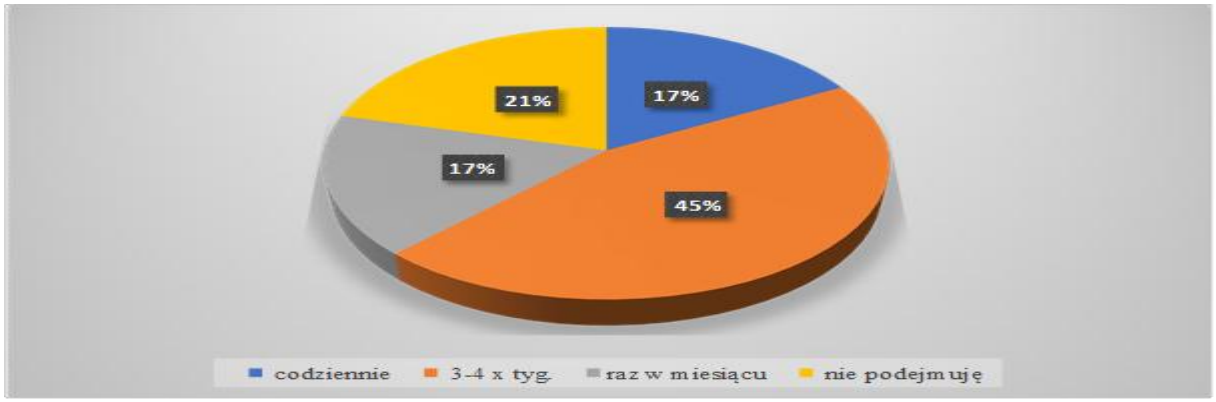

Chart 2. Frequency of physical activity by the people surveyed

Most respondents (42%) declared that walking was the most common physical activity undertaken. One in four respondents cycled, while 5% of respondents swam and 1% exercised at a gym.

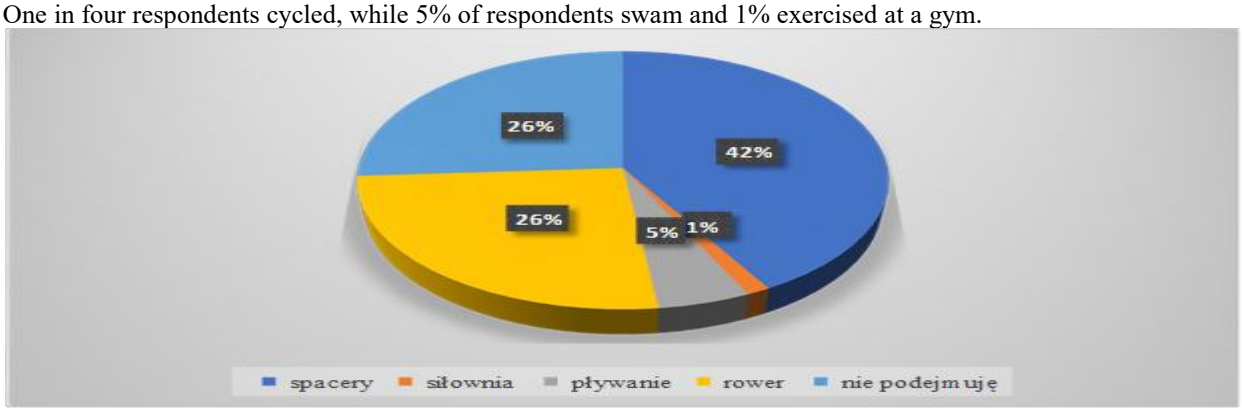

Chart 3. Type of physical activity of the people surveyed

More than half of the respondents (57%) declared that they were most motivated to take up physical activity by improving their wellbeing, 46% by reducing their body weight and 42% by improving their fitness. Among those surveyed, 16% have no opinion.

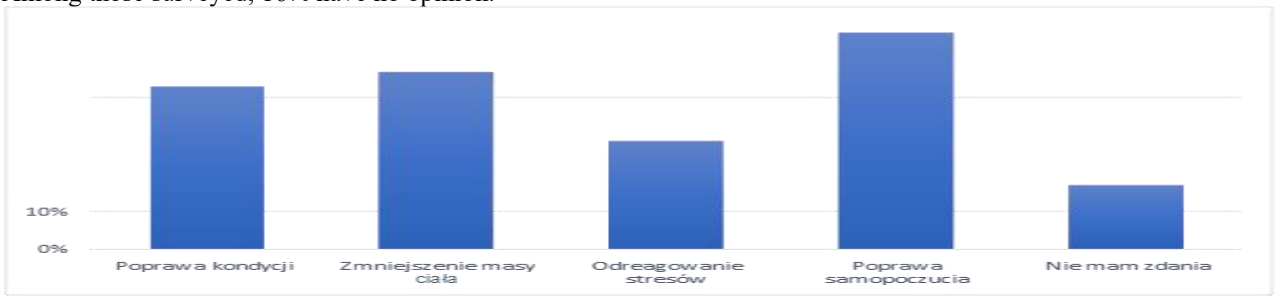

Chart 4. Motivation of people surveyed to engage in physical activity

The study presented a correlation between gender and the level of physical activity of the study subjects. When analysing the correlation between gender, no significant statistical differences were noted. Women and men were characterised by similar levels of physical activity.

Analysed variable			Gender		Chi^2 p
			women	men	
Level of physical activity	insufficient	N %	22 34,92%	4 28,57%	Chi^2 =0.390 p=1.885
	sufficient	N %	17 26,98%	2 14,29%	
	high	N %	24 38,10%	8 57,14%	
Total		N	63	14	-

Table 1. Gender and level of physical activity in study participants

The study compared the physical activity levels of the subjects in the age ranges 60-70 years and 71-80 years. Analysing the studies based on age using the Chi statistic test^2 (p=0.53034), there were no statistically significant differences. Age does not affect the level of physical activity.

Analysed variable			Age		Chi^2
			60-70 years	71-80 years	p
Level of physical activity	insufficient	N %	22 31,88%	4 50,00%	Chi^2 =1.268477 p=0,53034
	sufficient	N %	18 26,09%	1 12,50%	
	high	N	29	3	
		%	42,03%	37,50%	
Total		N	69	8	-

Table 2. Age and level of physical activity in study subjects

When analysing the relation between the place of residence and the level of physical activity of the subjects, no significant statistical differences were noted (p=0.82115).
Urban and rural residents had similar levels of physical activity.

Analysed variable			Place of residence		Chi²
			village	city	p
Level of physical activity	insufficient	N %	6 37,50%	20 32,79%	Chi2=0.3940979 p=0,82115
	sufficient	N %	3 18,75%	16 26,23%	
	high	N %	7 43,75%	25 40,98%	
Total		N	16	61	-

Table 3. Place of residence and level of physical activity in study subjects

When comparing the financial situation of the subjects and the level of physical activity, there were no significant differences (p=0.29501). Respondents with very good, good, bad financial situation were characterised by similar physical activity.

Analysed variable			Financial situation			Chi²
			very goods	goods	bad	p
Level of physical activity	insufficient	N %	6 37,50%	20 32,79%	1 11,11%	Chi2=4.925697 p=0,29501
	sufficient	N %	3 18,75%	16 26,23%	4 44,44%	
	high	N %	7 43,75%	25 40,98%	4 44,44%	
Total		N	9	59	9	-

Table 4. Financial situation and level of physical activity in people surveyed

The study showed that BMI did not affect the level of physical activity among the study group. Respondents with different BMIs had similar activity levels.

Analysed variable			BMI			Chi^2
			standard	overweight	obesity	p
Level physical of activity	insufficient	N %	5 31,25%	9 26,47%	12 44,44%	Chi2=2.927872 p=0,56997
	sufficient	N %	5 31,25%	8 23,53%	6 22,22%	
	high	N %	6 37,50%	17 50,00%	9 33,33%	
Total		N	16	34	27	-

Table 5. BMI and level of physical activity in study subjects

Discussion

In Poland, elderly population is characterised by low levels of physical activity, as shown by many studies. Only 10% of adults undertake physical activity in various forms. This low level of physical activity is mainly due to the lack or low level of Polish population's knowledge about exercise, sports and physical activity [14,15]. Gontarczyk and Dowbor [16] in their study divided Poles into active and inactive. The study was conducted to illustrate the level of physical activity in Poland. In the group of active Poles a decrease in physical activity was observed after the age of 30, while another increase in the frequency of physical activity was observed after the age of 60. The study found that 48% of older people did not undertake any physical activity. In contrast, the remaining people declared that they undertook regular physical activity three or more times a week. Of the active seniors, 55% preferred cycling, 20% swimming, 18% Nordic Walking, 12% running and 4% exercising individually [16]. Our own research showed that 56% of respondents over 60 years of age regularly undertook physical activity, while the remaining 44% did not. The largest number, 45% of seniors, declared that they undertook physical exercise 3-4 times a week. In contrast, 17% of the seniors surveyed declared that they undertook physical activity daily and once a month. Walking was the most common form of physical activity in the study group (42%), followed by cycling in 26% and swimming in 5%, while 1% of respondents attended gyms.

Skotnicka and Pieszko [17] studied weekly energy expenditure using the IPAQ, in which subjects were divided into three groups. The study distinguished three levels of physical activity: low (below 1800 METs), moderate (1800-2300 METs), and intensive (above 2300 METs). The study compared the MET energy expenditure of men and women. The study showed that out of 105 women surveyed, 58 respondents were assigned to the low physical activity group. In contrast, out of the 93 men surveyed, 41 achieved a moderate level of physical activity [17]. In our own study, physical activity levels were examined using the IPAQ questionnaire. The study distinguished three categories of physical activity level: insufficient level (below 600 METs), sufficient level (600- 1500 or 600-3000 METs) and high level (above 1500 or 3000 METs). Our own research showed that among the 63 women surveyed, 24 respondents achieved a high level of physical activity. On the other hand, out of the 14 men participating in the study, 8 also achieved high levels of physical activity like the women.

Zych [18] in his book "Lexicon of gerontology" formulated three reasons for seniors to undertake physical exercise. The first was the desire to inhibit the ageing process and to prevent age-related diseases. Another reason was a preference for active recreation. On the other hand, some older people undertook physical activity because they considered movement as a method of treatment or rehabilitation after an illness [18]. The abov-described motives for undertaking physical activity in older people have been confirmed in a number of studies. The results of Wasilewicz's study [19] showed that in 37% of respondents the motives for undertaking physical activity were health needs, in 30% the opportunity to meet with friends, in 23% a way of spending free time, and in 10% undertaking physical activity was associated with entertainment [19]. In our own study, 57% of the seniors surveyed said that improving their well-being motivated them most to undertake physical activity,

47% declared that reducing body weight, 43% improving their fitness, 29% relieving stress, and the remaining 17% of respondents had no opinion on their motivation to undertake physical activity.

In her study, Wasiluk [20] analysed the level of physical development based on the assessment of BMI. The study involved 141 women and 137 men aged over 60 years. 78.33% of the women and 82.03% of the men were found to be overweight or obese. In contrast, regular weight was found in 21.67% of women and 17.97% of men. Only one person was reported to be underweight. A study showed that physical activity in both sexes does not affect the presence of overweight or obesity in older people [20]. Our own study showed that 44% of the subjects were overweight, 27% suffered from first degree obesity and 8% suffered from second degree obesity. In contrast, 21% had a regular body weight. The analysis of the study results also showed that those with regular body weight (37.50%) and those overweight (50%) showed high levels of physical activity. In contrast, those with obesity (44.44%) had insufficient levels of physical activity. However, when analysing the results with the Chi test^2, no significant statistical differences were obtained, meaning that body mass index (BMI) does not affect the level of physical activity in people over 60.

Summary

Nowadays, people over 60 lead active lifestyles. They usually undertake physical activity 3-4 times a week. In older people, walking is the most popular form of physical activity whereas gym training is the least popular. The most common motivation is to improve wellbeing, reduce body weight and improve fitness. Lack of exercise in this age group in most cases becomes the cause of the development of many diseases as well as a reduction in the functional, mental, social performance of older people. Regular physical activity by seniors prevents from the effects of the ageing process.

Conclusions

1. The level of physical activity in the older people surveyed is sufficient.
2. Sociodemographic factors and BMI do not determine the level of physical activity in the elderly study group.

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