

Physical activity of the elderly and the comfort of their lives

Aktywność fizyczna ludzi starszych a komfort ich życia

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Abstract

Introduction. Aging societies are common in today's world. **Aim.** To determine the level and forms of physical activity in the elderly. **Material and methods.** The study assessed 50 women and 50 men aged 60 to 64 years (32 people), 65 to 69 years (18 people), 70 to 74 years (31 people), and over 75 years (19 people). 31 participants lived in villages and 69 lived in a city. All participants were pensioners. In the past, the participants led lifestyles characterised by moderate (62%), high (22%), or low (16%) levels of activity. The research method consisted in using a survey based on a questionnaire created by the authors which collected personal data and included 12 questions. **Results.** Physical activity is closely associated with health and influences the quality of life of every person. All study participants were independent when it came to basic activities of daily living and exercise. The study showed a correlation between the physical activity the elderly decided to take up (i.e. recreational physical activity) and better functioning and well-being. **Conclusions.** 1. An appropriate level of physical activity ensures optimum efficacy of the adaptive, functional, and morphological mechanisms. 2. There is a close correlation between the physical activity the elderly decide to take up (i.e. recreational physical activity) and better functioning and well-being. 3. Systemic efforts are necessary to help make seniors, including future seniors, more active, especially with respect to physical activity, which can be achieved by implementing actions and appropriate prevention programmes that would contribute to the successful aging process. (Gerontol Pol 2019; 27; 256-264)

Key words: elderly, physical activity

Streszczenie

Wstęp. Starzenie się społeczeństwa jest zjawiskiem powszechnym. **Cel pracy.** Określenie poziomu oraz form podejmowanej aktywności fizycznej przez osoby starsze. **Materiał i metody.** W badaniu wzięło udział 50 kobiet i 50 mężczyzn w wieku od 60 do 64 lat (32 osoby), 65 – 69 lat (18 osób), 70-74 lata (31 osób) oraz powyżej 75 lat (19 osób). 31 osób to mieszkańcy wsi, zaś 69 to mieszkańcy miasta. Wszyscy badani obecnie na emeryturze. Wcześniej prowadziły średnio aktywny tryb życia (62%), aktywny (22%) lub mało aktywny (16%). Jako metodę badawczą zastosowano metodę badań ankietowych, wykorzystując autorski kwestionariusz ankiety, w jakim umieszczono 12 pytań oraz metryczkę. **Wyniki.** Aktywność fizyczna jest ściśle związana ze zdrowiem i posiada wpływ na jakość życia każdego człowieka. Wszystkie osoby poddane analizie były samodzielne oraz niezależne w wykonywaniu elementarnych czynności dnia codziennego i ćwiczeń ruchowych. Według przeprowadzonego badania wykazano związek pomiędzy świadomie podejmowaną aktywnością fizyczną (tj. rekreacyjną) i lepszym funkcjonowaniem i samopoczuciem starszych osób. **Wnioski.** 1. Właściwy poziom aktywności gwarantuje optymalną sprawność mechanizmów adaptacyjnych, funkcjonalnych i morfologicznych. 2. Istnieje ścisły związek pomiędzy świadomie podejmowaną aktywnością fizyczną (tj. rekreacyjną) i lepszym funkcjonowaniem i samopoczuciem starszych osób. 3. Konieczne jest podjęcie systemowych działań na korzyść aktywizacji, szczególnie fizycznej, obecnych oraz przyszłych seniorów przez wdrożenie działań i odpowiednich programów profilaktycznych, które mają wpływ na proces pomyslnego starzenia się. (Gerontol Pol 2019; 27; 256-264)

Słowa kluczowe: osoby starsze, aktywność fizyczna

Introduction

Aging societies are common in both developed and less developed countries, resulting in an increased num-

ber of people over the age of 65. According to Statistics Poland (GUS), 13.6% of people in Poland were aged more than 65 years in 2008; the proportion is expected to be 24% in 2030.

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In the second half of the 20th century, life expectancy in Poland increased on average by 14 years in females and 11 years in males. It is expected that in 2020, the number of people aged 60 years or older will reach 9.5 million (24% of the general population). The oldest age group (over 80 years) is also expected to grow from 740,000 in 2002 to 1.4 million [1,2].

Studies conducted in Poland in 2002 showed that approximately 2.2 million people over the age of 65 required help from carers during at least one basic activity of daily living (SDL, Activities of Daily Living). More than 50% of people over the age of 75 have frailty syndrome, whose manifestations include weakness, weight loss, and reduced muscle strength, which soon leads to complete disability. Aging encompasses natural, irreversible, progressive changes in the metabolism and physicochemical properties of cells, resulting in impaired self-regulation of regeneration of the human body as well as morphological and functional changes in tissues and organs [3-11].

Different aspects of aging

Biological aspect: changes in the functioning of the senses, changes in appearance, disturbances in organ and body system functions, various diseases.

Psychological aspect: it depends mostly on how people react to the consequences of aging, how well they are prepared for old age, and what they plan to do when they retire.

Social aspect: it is mostly associated with the role people play once they retire. These roles constantly change throughout a person's life, which is accompanied by changes in physical fitness and activity.

Physical activity is known to prevent motor deterioration in people and reduce the burden of aging. People should engage in physical activity adjusted to their exercise performance, biological age, and health throughout their lives, at every stage of ontogenesis [12-20].

Unfortunately, the increasingly longer life expectancy does not always mean a completely happy and fruitful life. So-called successful aging depends on a number of factors, with regular physical activity being a crucial one. Consequently, efforts to help the elderly should be aimed, among others, at maintaining the highest possible level of functional fitness, which will result in independence and self-sufficiency [1-10,19].

Types of physical activity in the elderly

Nordic Walking

Nordic Walking combines natural walking with the cross-country skiing technique. Unlike ordinary walking, Nordic Walking engages the upper body muscles.

Yoga for seniors uses mainly static positions (static asana). These positions do not put a significant load on the wrists; they strengthen the spine, ankles, and hips. Yoga is used in elderly patients who often complain of joint and muscle pain, memory and concentration problems, and insomnia.

Aqua aerobics and swimming should be used as best forms of active rest, which is very beneficial for overall health.

Swimming is recommended for everyone; children and adolescents, adults, the elderly, as well as pregnant women as all enjoy spending time in water.

Dancing is not only a perfect and effective medicine, but also a form of recreation. Rhythmic movements performed to music relax, reduce muscle tone, and lead to a feeling of control over one's body; moreover, they allow people to release emotions and gain internal balance.

Treatment and rehabilitation

Health training for the elderly uses certain types of physical exercise to prevent reduction in the adaptive capabilities of the whole body that allow it to cope with the stress of exercise. Older people should be encouraged to take up various forms of physical activity. Health promotion should teach people about the benefits of training and the risks of a poor lifestyle. Regular physical training is beneficial for the cardiovascular system and for the changes that occur in the circulatory system of the elderly. Blood pressure increases with age; regular training contributes to a reduction in blood pressure values.

Aging is a risk factor for disability. A sedentary lifestyle and a low level of physical activity largely contribute to the mechanical weakening of bones and make them more prone to fractures. Appropriate training slows down changes that occur in the musculoskeletal system, considerably improves the elasticity of the periarticular tissues, helps preserve the physiological ranges of motion in joints, and improves patients' functioning.

Regular physical activity is of key importance to the nervous system, whose normal function develops in association with skeletal muscle activity. Effects of regular exercise are visible especially when it comes to movement coordination, technique, and autonomization, speed, emotional states, well-being, and cognitive functions

of the brain. Physical exercise improves mood in the elderly [1,2,7-10,19].

Physical activity considerably improves respiratory system function. The benefits include improved elasticity of the respiratory muscles, chest mobility, and respiratory ventilation, longer exhalation, deeper inhalation, and effective cough.

Exercise has a positive influence on the immune system in the elderly. Moderate-intensity exercise influences immune mechanism changes; these include increased blood levels of IgM and IgG antibodies, increased production of IFN- γ , IL-4, and IL-2 cytokines, and a higher number of T helper cells.

With age, changes develop in the endocrine system that are associated with worsening glucose metabolism; the risk of Type 2 diabetes increases. Consequently, health training should be used in diabetes prevention.

Aim

The aim of this study was to determine the level and forms of physical activity in the elderly.

Material and methods

The study analysed 50 women and 50 men. The participants were aged 60 to 64 years (32 people), 65 to 69 years (18 people), 70 to 74 years (31 people), and over 75 years (19 people). 31 individuals lived in villages and 69 lived in a city.

The participants had vocational (81%) or higher education (19%). All participants used to work and were now retired.

In the past, the participants led lifestyles characterised by moderate (62%), high (22%), or low (16%) levels of activity.

Study techniques and methods

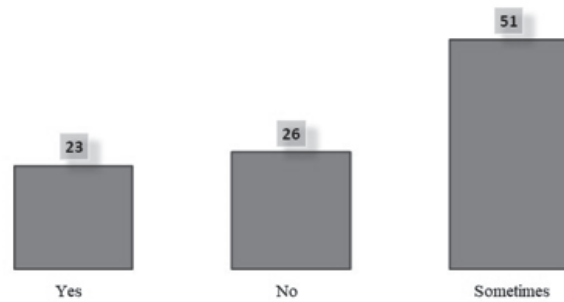
The study was conducted in a group of 100 individuals living in Nowy Targ and the surrounding area.

- age – post-working age
- sex – the numbers of women and men were equal.

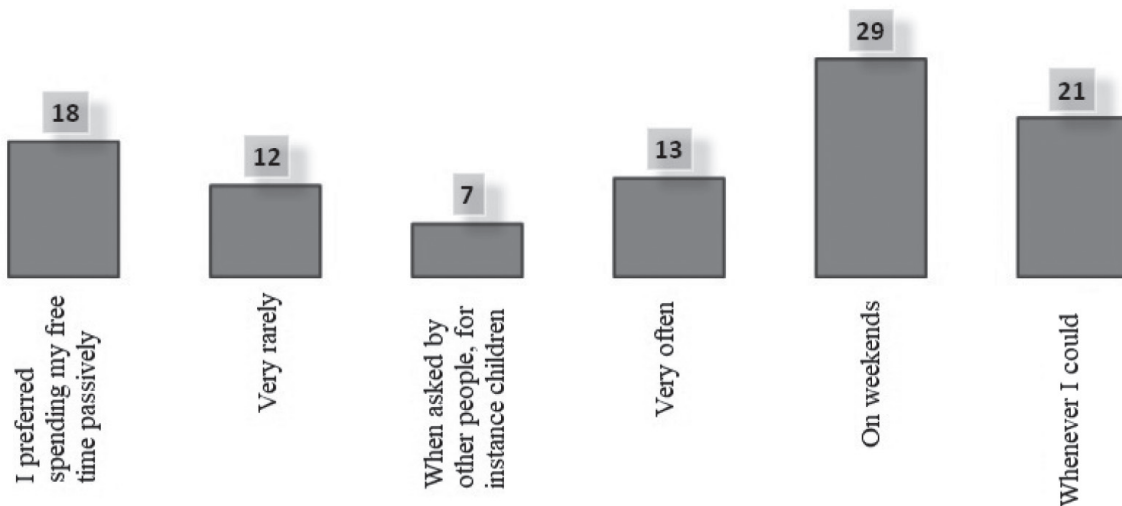
An anonymous survey was used as the research method. The survey was given out during University of the Third Age classes and among family allotment gardeners. A 12-item survey questionnaire, prepared by the authors, became the research instrument. The questionnaire also included questions about personal data, such as age, sex, place of residence etc.

Results

The first question was as follows: *In the past, did you follow a healthy diet?* The answers are presented on the graph below.



Graph 1. Answer to question: In the past, did you follow a healthy diet?



Graph 2. In the past, how often did you spend your free time doing physical activities?

More than a half (51%) of the respondents indicated that they had followed a healthy diet only occasionally.

The next question was as follows: *In the past, how often did you spend your free time doing physical activities?* The answers are presented on the graph below.

Study participants usually (29%) spent their free time doing physical activities at weekends.

The participants were then asked to answer the following question: *What means of transport do you usually use (now)?*

The respondents usually used a car (34%) or walked (32%).

The next question was as follows: *How do you usually spend your free time now?*

The respondents usually spent their free time taking care of their grandchildren (33%).

They were then asked *How often they engaged in physical activity?*

The participants usually engaged in physical activity at weekends (28%) or every day (22%).

The next question was as follows: *What forms of activity do you choose (you may select more than one answer)?* The answers are presented on the graph below.

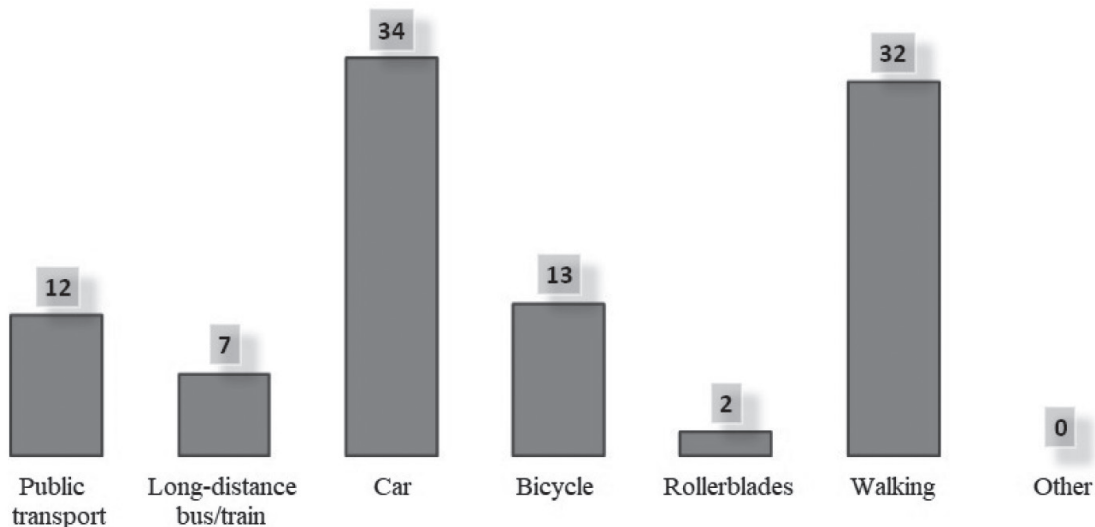
The respondents preferred going for a walk (59%), swimming (41%), hiking (38%), and Nordic Walking (29%).

The next question was as follows: *Why do you engage in physical activity?* The answers can be seen below.

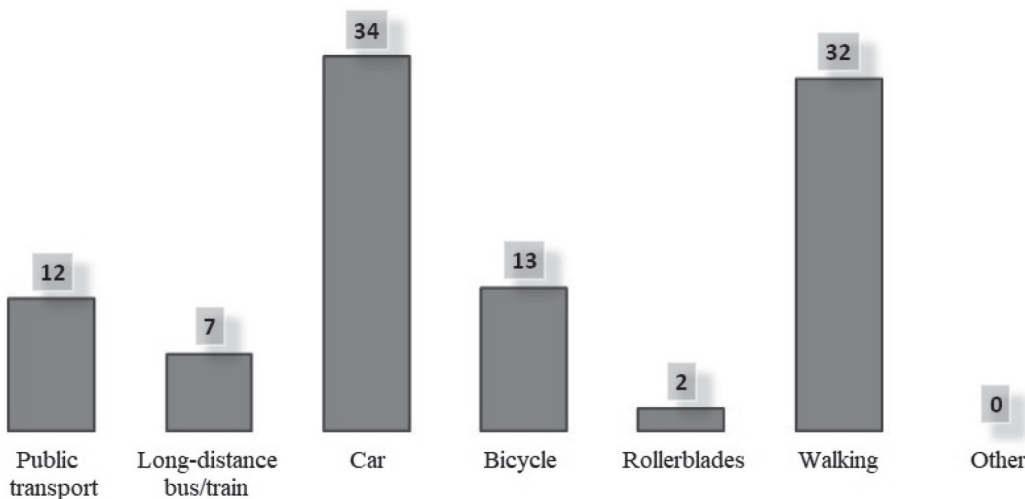
Study participants usually engaged in physical activity to improve their well-being (25%) and appearance (20%).

The next question was as follows: *Are there any reasons why you do not engage in physical activity?* The answers are presented below.

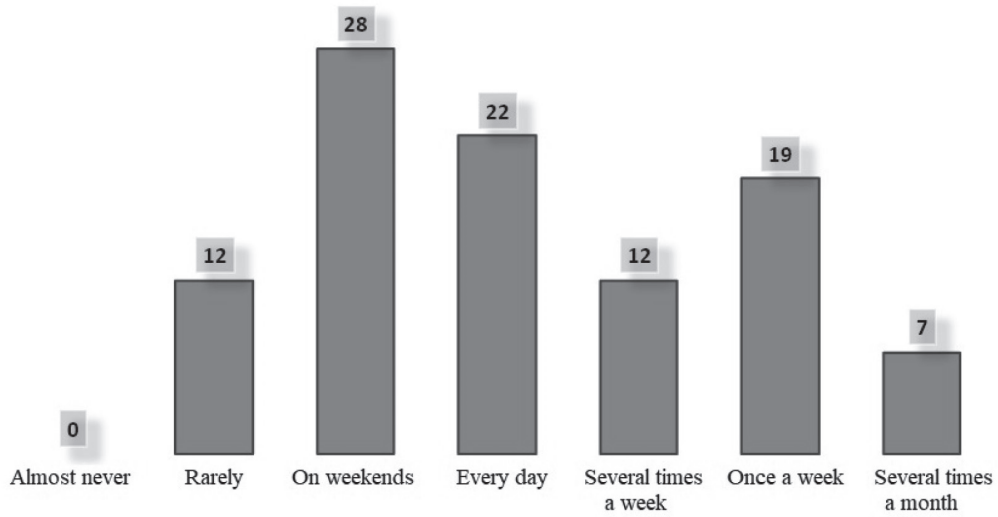
Too many responsibilities may prevent patients from taking up physical activity (27%).



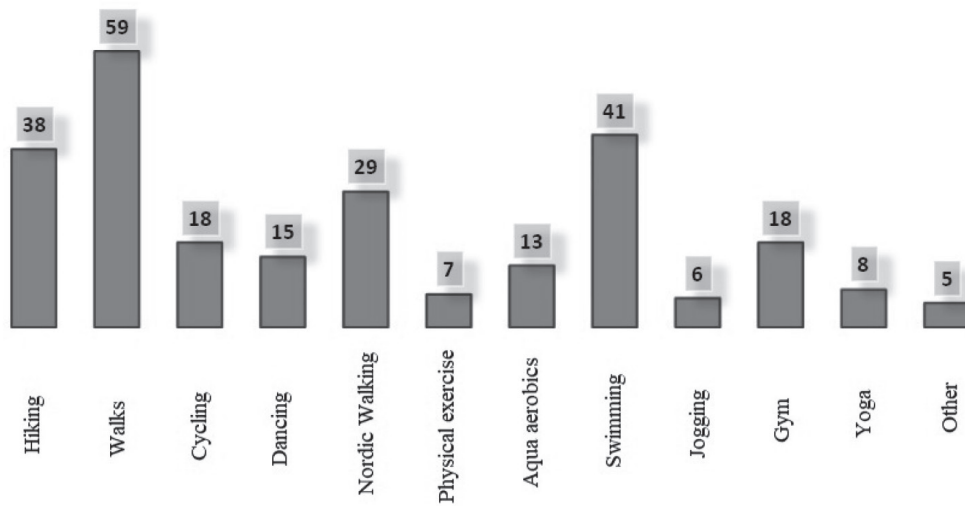
Graph 3. What means of transport do you usually use (now)?



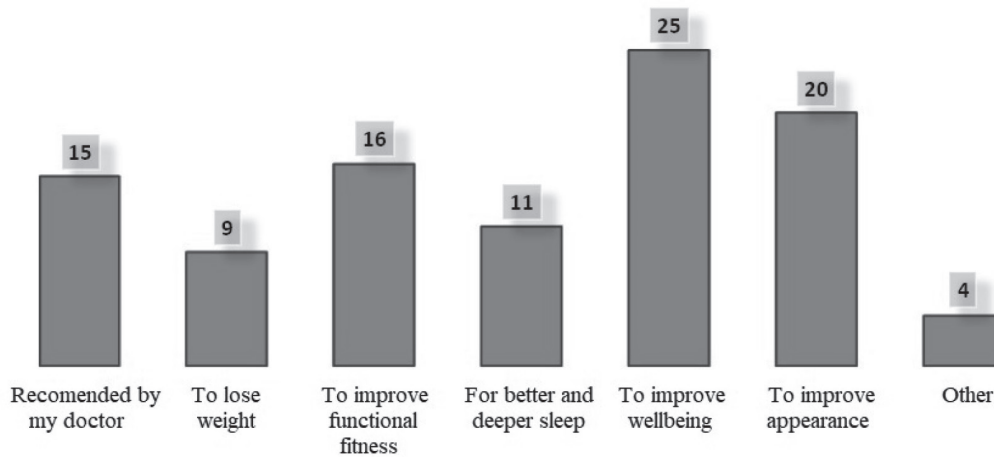
Graph 4. How do you usually spend your free time now?



Graph 5. How often do you engage in physical activity?



Graph 6. What forms of activity do you choose?

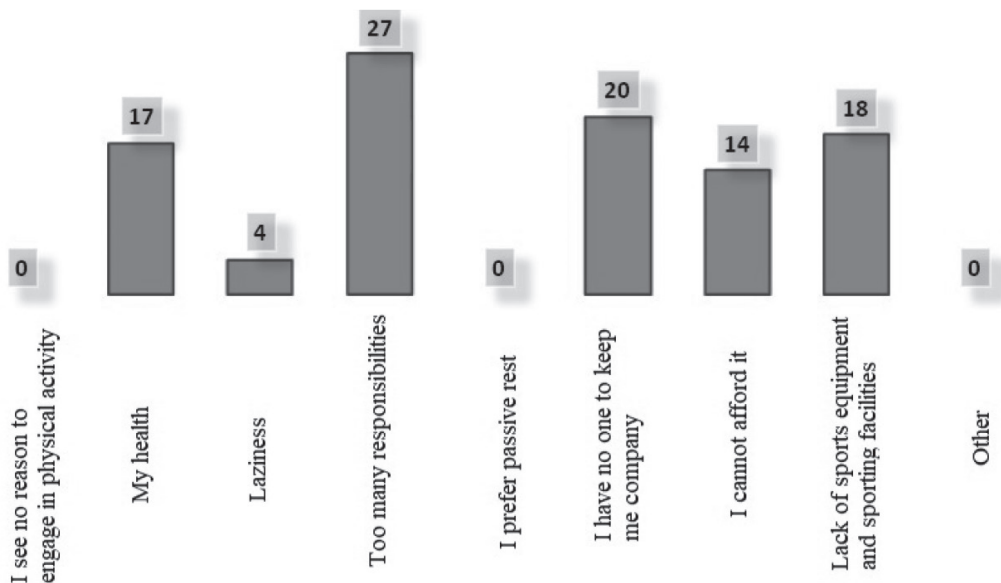


Graph 7. Why do you engage in physical activity?

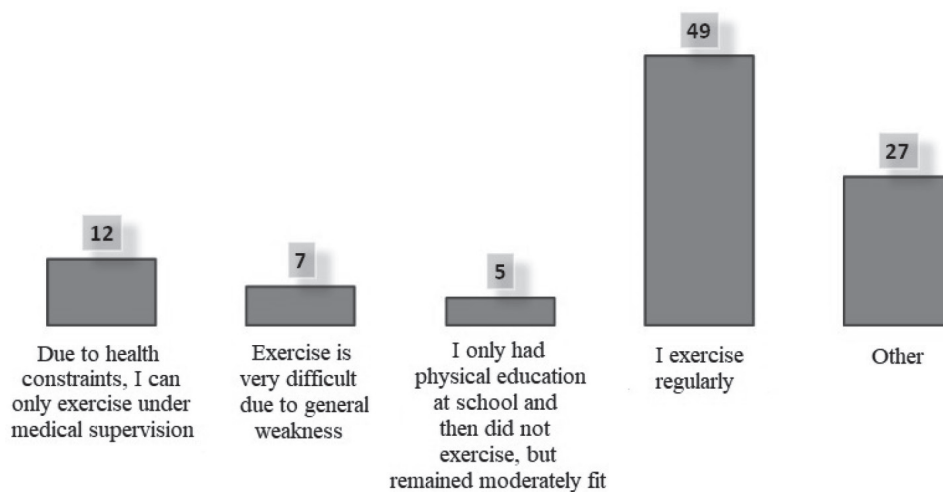
Next, the participants were asked to express their opinion about themselves: *Would you describe yourself as a person who...* The answers are presented on the graph below.

Almost half of the participants believed they did regular exercise (49%).

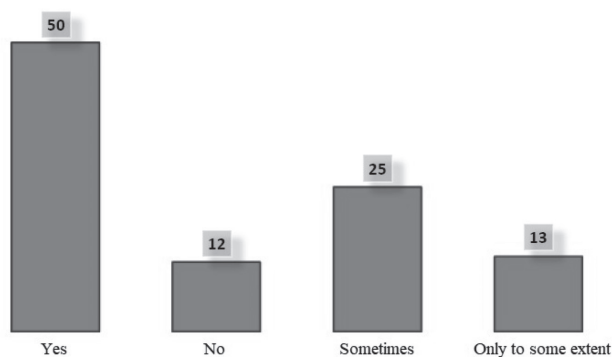
The next question was as follows: *Do you feel the need to engage in physical activity?* The answers are presented on the graph below.



Graph 8. Are there any reasons why you do not engage in physical activity?



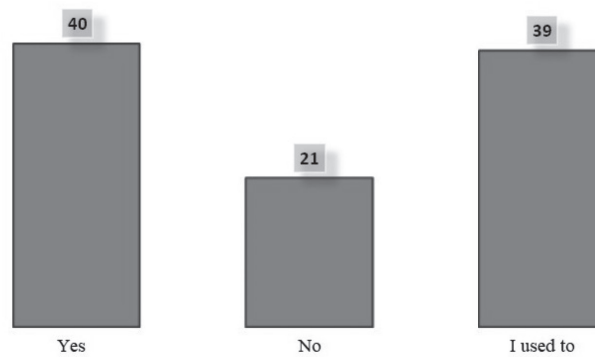
Graph 9. Answer to the question about the participants' activity



Graph 10. Do you feel the need to engage in physical activity?

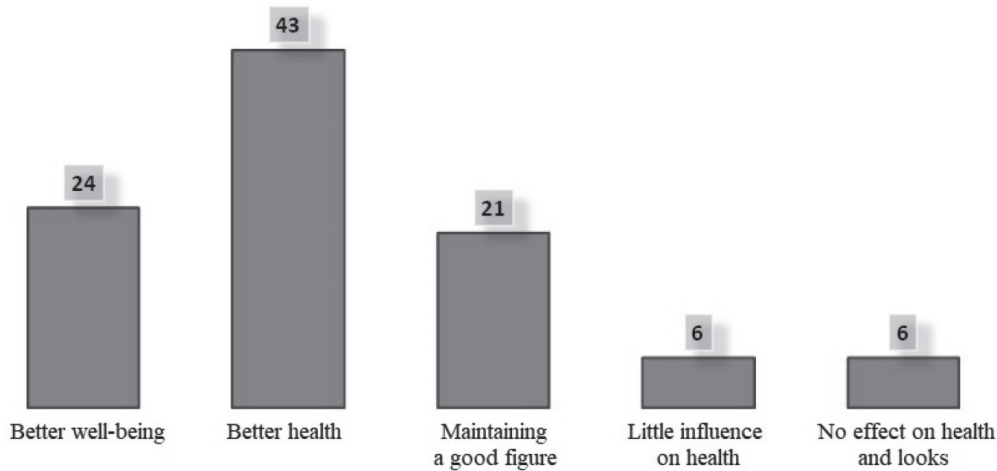
Half of the respondents (50%) felt the need to engage in physical activity.

The respondents were also asked the following question: *Do you visit a rehabilitation clinic or use another type of external help?* The answers are presented on the graph below.



Graph 11. Answer to question: Do you visit a rehabilitation clinic or use another type of external help?

The data shows that 40% of the participants visited a rehabilitation clinic or used another type of external help at the time of the study, while 39% had visited a clinic or used such help in the past.



Graph 12. Answer to the question about the correlation between health and physical activity

The last question asked the participants about their opinion: *In your opinion, the highest correlation exists between physical activity and...* The answers are presented on the graph below.

The participants believed that the highest correlation exists between physical activity and better health; this answer was selected by almost half of all participants (49%).

Discussion

Physical activity is an important part of human life. It plays an important role in maintaining health and fitness, easier ambulation, performing household chores, doing sports, physical recreational activities, and at work, particularly during manual labour [1-10,19].

Physical activity is necessary to ensure normal ontogeny. According to European Union recommendations on physical activity, human body undergoes morphological and functional changes as a result of regular physical activity, which may prevent various diseases or delay their onset and improve one's capability to perform physical exercise.

The World Health Organisation and the European Union recommend that the elderly do moderate physical activity for at least 30 minutes 5 days a week or very vigorous physical activity for at least 20 minutes 3 days a week. They also recommend doing exercise that increases stamina and muscle strength 2 to 3 times a week. Strength training and exercise that improves motor coordination and helps prevent falls are extremely important for this group of patients [1,3,5-7,19].

It is impossible to indicate the exact single moment a person becomes old, because the process and its intensity vary between individuals; moreover, aging is associa-

ted with a variety of symptoms. This depends on one's lifestyle, socio-professional activity, sex, working and living conditions, past injuries and diseases, and genetic factors. A person's mental attitude towards old age and ability to accept the changes that come with it seem to be the most important aspects.

The elderly people assessed in the study usually engaged in physical activity at weekends. The most common means of transport were cars (34%) or walking (32%).

The respondents spent most of their free time taking care of their grandchildren (33%). Moreover, in their free time they preferred going for a walk (59%), swimming (41%), hiking (38%), and Nordic Walking (29%). The literature stresses that the intensity of different forms of physical activity has to be appropriately selected so that they do not cause excessive tiredness. Younger seniors are usually recommended to perform general fitness, locomotion, and coordination exercise. Regular physical exercise has a considerable influence on neuromuscular coordination and physical performance and helps maintain or even improve the motor abilities necessary and useful in everyday life.

Moreover, according to the respondents, the elderly take up physical exercise mainly to improve their well-being (25%) and appearance (20%). However, too many responsibilities prevent people from taking up regular physical activity (27%).

It should be emphasised that almost half of the participants believed that they exercised regularly (49%), which is caused by the fact that 50% of the respondents felt the need to engage in physical activity. Moreover, the elderly took up exercise and physical activity due to health reasons, as 40% of the respondents visited rehabilitation clinics or used other forms of external help and another 39% had visited or used them in the past. The

participants of the study also pointed out that their physical activity was associated with better health.

These findings are consistent with the results of other studies [1-3] showing that physical performance and life skills in the elderly are not just determined by the unavoidable aging processes, but also by the fact that with age, people reduce their physical activity, even though there is no biological rationale for it. Social, psychological, and other factors have a decisive influence on the increasing (even in middle-aged people) tendency to limit one's physical activity in everyday life.

Sports that may be recommended for the elderly include yoga, aqua aerobics and swimming, Nordic Walking, and dancing.

Engaging in outdoor activities does not only mean doing sports, but is also an opportunity to spend time with other people.

Physically active people are healthier and have better immunity. Doing sports is beneficial for the spine and joints, improving joint mobility. Every loss of physical fitness may result in problems with ordinary everyday activities and cause depressive states. Consequently, regardless of age, people cannot give up on various forms of physical activity; just like everyone else, an elderly person can find a perfect sport.

Conclusions

1. Physical activity is closely associated with health and has an influence on the quality of life of every person.
2. An appropriate level of physical activity ensures optimum efficacy of the adaptive, functional, and morphological mechanisms.
3. All study participants were independent when it came to basic activities of daily living and exercise.
4. The study showed a correlation between the physical activity the elderly decided to take up (i.e. recreational physical activity) and better functioning and well-being.
5. Systemic efforts are necessary to help make seniors, including future seniors, more active, especially with respect to physical activity, which can be achieved by implementing actions and appropriate prevention programmes that would contribute to the successful aging process.

Conflict of interest

None

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