

Impact of physical activity on the quality of life of residents of a social welfare home

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Abstract

Introduction: Physical activity is the main factor in strengthening health in every phase of life and an important element in connection with the quality of life. When assessing the quality of life of older people it is necessary to take into account various aspects related to health and physical and psychological well-being as well as the indicators of social functioning. The aim of the work is to assess the impact of physical activity on the quality of life of social welfare home residents.

Material and methods: The research was carried out with the help of two questionnaires used to assess the quality of life (WHOQOL-BREF, SF-36) and the IPAQ questionnaire thanks to which the physical fitness of patients was assessed.

Results: Women are more likely to become more physically active. The somatic sphere has the most connection with physical activity. The subjects showing the sufficient physical activity are characterized by the highest scores on the psychological sense scale.

Conclusions: Physical activity is one of the main factors determining the quality of life of older people.

Key Words: WHOQOL questionnaire ; SF - 36 questionnaire ; IPAQ questionnaire ; quality of life

Introduction:

Physical activity as one of the determinants of physical fitness is the main factor integrating the component of a healthy lifestyle, maintaining or improving the functional efficiency of the body. In addition, it prevents diseases, especially of the circulatory system and helps in handling with stress. Physical activity can be considered as an important determinant of quality of life and subject to modification through conscious health-oriented action. High level of physical activity is directly reflected in physical fitness and increase vital energy, motivating to further activity [31]. Due to the definition of the World Health Organization (WHO), quality of life is "an individual way of perceiving an individual's position in a cultural context and the system of values in which he lives, and in relation to tasks, expectations and standards determined by environmental conditions". To the indicators of quality of life we include the ability to play our previous life roles, adaptability, psychological well-being and functioning within social groups [28]. The quality of life conditioned by the state of health is determined by the length of life and modified by physical disability, functional limitations, the way they are perceived and the possibilities of social activity [9]. From the patient's point of view, his subjective feelings about his health are the most important. As a result of specific procedures, having a proven positive effect on clinical parameters, the patient is worse off in assessing his economic situation, his ability to function and well-being, which influences his health decisions. Therefore, in medicine, more and more often, apart from objective clinical parameters, the impact of treatment and disease on the quality of life of the patient is assessed, which allows also to consider his point of view [25]. Numerous studies, both on large population trials, especially in the US and on groups of healthy and ill people after severe accidents, show that objective living conditions are not unequivocal predictors of a sense of quality of life. Due to the fact that certain people have a significantly higher financial level and the others have an objectively poor state of health, it can be predicted that the first group will have much higher scores in measures of the sense of life satisfaction [3,7].

Turning to important problems of a methodological nature, it should be noted that even when we assume that in the study of the quality of life we are guided by an individual, subjective assessment of the respondents, it is important to care about minimizing "measurement errors". Subjects give higher values for life satisfaction assessments in a situation of direct interview with the researcher than in the case of completing the questionnaire. The given situations shows the importance of measuring the quality of life as components of various areas of life of the subjects. Only thanks to the thorough examination we will be able to assess the exact quality of life [22]. The views expressed by Hippocrates may be called the beginning of interest in the concept of "quality of life" (the expression of a happy life is to be the state of internal balance). Quality of life has been included in the area of sociology, psychology and medicine research in the 20th century, and Campbell is considered to be the precursor of the first research, who in 1971 carried out research aimed at measuring satisfaction with the lives of US residents. The definition of quality of life can be divided into four groups: existential definitions, life definitions, definitions that put quality of life in the category of needs and definitions that distinguish the objective and subjective quality of life while considering the needs concepts [4]. When assessing the quality of life of older people, it is necessary to take a look into various aspects related to health and physical and psychological well-being as well as the indicators of social functioning. The information is a reflection of a sense of happiness, cognitive functioning, vision of oneself, coping with changes and limitations of the body, social comparison, positive attitude, determination [10,12]. Thanks to well-researched research, we can improve further treatment of the patient. It should be noted that people in the 60+ age category are less satisfied with their lives than younger people, and therefore also declare a lower sense of happiness. Nevertheless, a comparison of the quality of life with physical activity can raise awareness of the impact of movement on improving the well-being of the subjects [24, 27]. The aim of the presented work is to show the correlation between physical activity and the quality of life of patients of the Social Welfare Home.

Material and methods:

The research was carried out in the Social Welfare Home located at Krucza 17 street in Szczecin. The people living in the facility were subjected to research. The inclusion criterion was the patient's age, 60 years of age, and the ability to move on his own without using orthopedic devices. The interview was conducted with people who agreed to participate in the study, based on which it was decided whether they were eligible for the research group. In the next stage, the respondents were asked to complete questionnaires. The following questionnaires were used to assess the quality of life of patients: SF-36 (Questionnaire for Quality of Life Assessment) and WHOQOL - bref (abbreviated version of the quality of life survey). The IPAQ questionnaire (International Physical Activity Questionnaire) was used to assess the physical fitness of patients. Based on the WHOQOL - bref questionnaire, we have received results that allow us to assess such domains as the somatic, social, environmental and psychological.

The environmental sphere highlighted aspects of life such as a sense of security, realizations of interests, housing conditions, financial situation, health care facilities and communication. The social sphere focused on interpersonal relations and mental support. The psychological sphere focused on the negative psychological experiences of the patient, his self-satisfaction in everyday life and the acceptance of the appearance. The somatic sphere included the presence of physical pain, degree of demand for medical treatment, individual satisfaction in the daily performance at work and daily life, as well as satisfaction with sleep and rest [15]. In accordance with the WHO recommendation, the recalculation of points obtained for individual fields in the range from 0 to 100 points was used, where the higher the number of points obtained, the higher the quality of life [30]. An additional questionnaire used to assess the quality of life used during the study is SF - 36. It allows to assess eight indicators of quality of life. Physical function, limitation in performing roles due to physical health, pain, general sense of health, vitality, social functioning, limitation in performing roles resulting from emotional problems, mental health. It is intended for subjective health assessment, focusing questions about the activity during the last 30 days. Thanks to the detailed assessment of many aspects of life, we were able to distinguish two indicators, ie physical functioning and a sense of mental health. The conversion of points in the range from 0-100 has been applied. It should be noted that a high score determines a better quality of life [23, 26]. IPAQ - scrupulous questions in questionnaire allow to isolate the energy expenditure of particular forms of activity. The extended form of the questionnaire is used in very detailed analyzes and can be used to measure and compare the physical activity of a research group. It applies to physical activity performed in the last 7 days. Divided into 5 parts, the IPAQ questionnaire reaches out with all its questions to all aspects of physical exertion starting from physical exercise at work, during movement, housework, sport and time spent sitting. Based on the limitations of the research group, which is no longer professionally active, some questions about physical exertion at work were omitted [1]. Based on the obtained results, the examined persons could be classified due to the level of their physical activity. The category "high" included people who met one of the following two criteria: three or more days of intense physical effort, a total of at least 1500MET min / week, or seven or more days of any combination of efforts exceeding 3000MET min / week. The "sufficient" category includes people who meet one of the three criteria listed below: three or more days of intense physical activity not less than 20 min per day, three to five days of moderate effort or walking no less than 30 mins a day, from five days and above on any combination of physical activity exceeding 600 MET min / week. The last category of "insufficient" includes people who did not show any physical activity or did not meet the conditions for a sufficient or high level [2].

Results:

103 people agreed to conduct a test based on completing the questionnaires. The criterion for inclusion in the research was a certain age of over 60 years and the ability to move on their own without using orthopedic devices. 60 women and 43 men residing in the center of the Social Care Home in Szczecin on Krucza Street were qualified for the study. The average age of women was ± 72.7 and men ± 70.1 . Among the respondents, none of them was professionally active. 18.4% (19 people) declared satisfaction with their state of health, while the poor state of health was declared by 40.8% (42 people) of the respondents. The remaining number of respondents believed that their health was neither good nor bad.

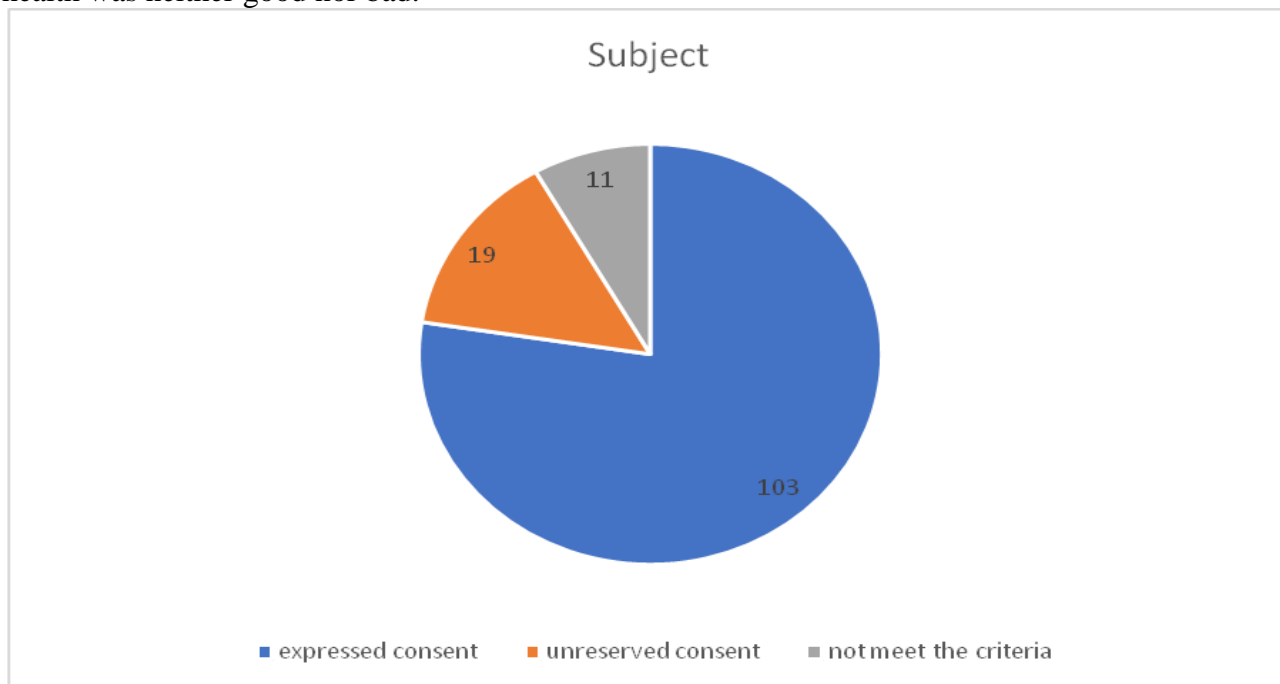


Chart 1. The pie chart shows the total number of people undergoing the tests

Chart 1 presents a generalized basic research group that was registered during the first phase of recruitment for research. It consisted of 133 people. 19 people (14%) presented in the chart did not agree to the study and were excluded from further research. During the subsequent interview with potential subjects, 11 (8%) people who did not meet the criteria of the age above 60 years of age or displacement without orthopedic devices were excluded. The target research volume consisted of 103 (77%) people who agreed to the study and met all the criteria needed for inclusion in the study.

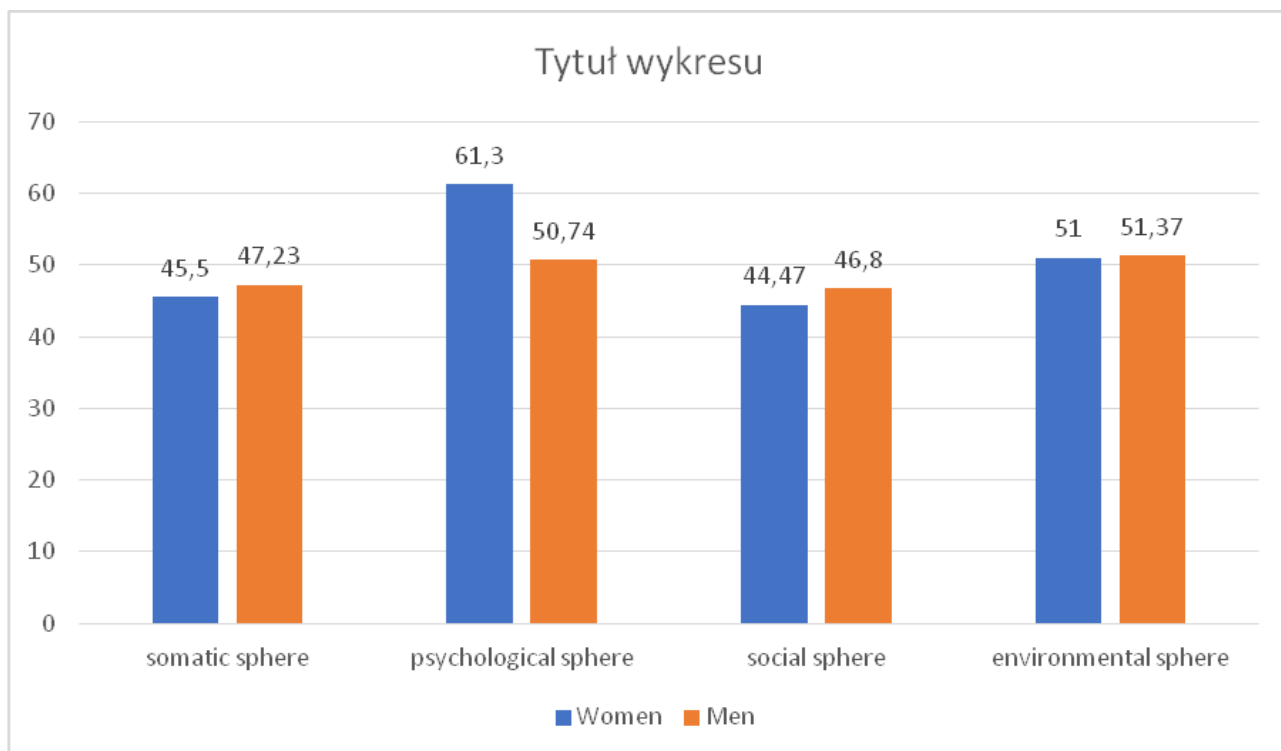


Chart 2. The average assessment of the quality of life in the four presented life spheres

We are able to notice a significantly higher level of quality of life in comparison of women and men in the psychological sphere. In women, it is 61.3 and in men 50.74. The lowest quality of life was declared for men in the social sphere, amounting to 44.7. In the remaining spheres, the quality of life in both men and women is not greatly set aside.

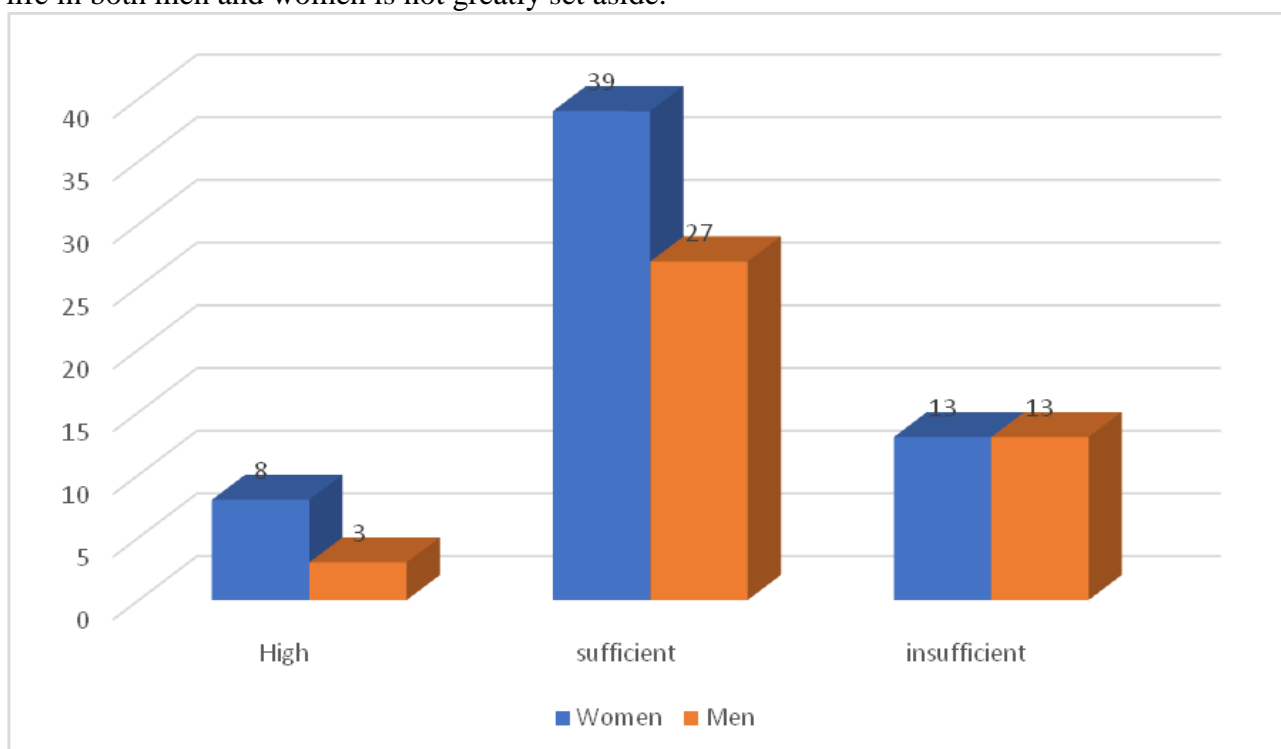


Chart 3. The graph presents the division into criteria in terms of physical activity among the surveyed women and men.

The above chart presents the division into three groups classified on the basis of the IPAQ questionnaire. It can be observed that 8 women (13.3%) and 3 men (7%) were classified as having high physical activity. Most of the research group was in a group with sufficient physical activity,

as many as 66 people (64%), including 39 women and 27 men. In the last group of insufficient people there were people who did not show physical activity to a sufficient degree, 13 (30%) men and 13 (21.7%) women.

Subjects	Average physical activity shown in MET (minutes / week)
Women	1818,8
Men	1546,6

Table 1. Average physical activity carried out within the last week.

Table 1 presents the average physical activity demonstrated in MET. Men show less activity by 15% than women.

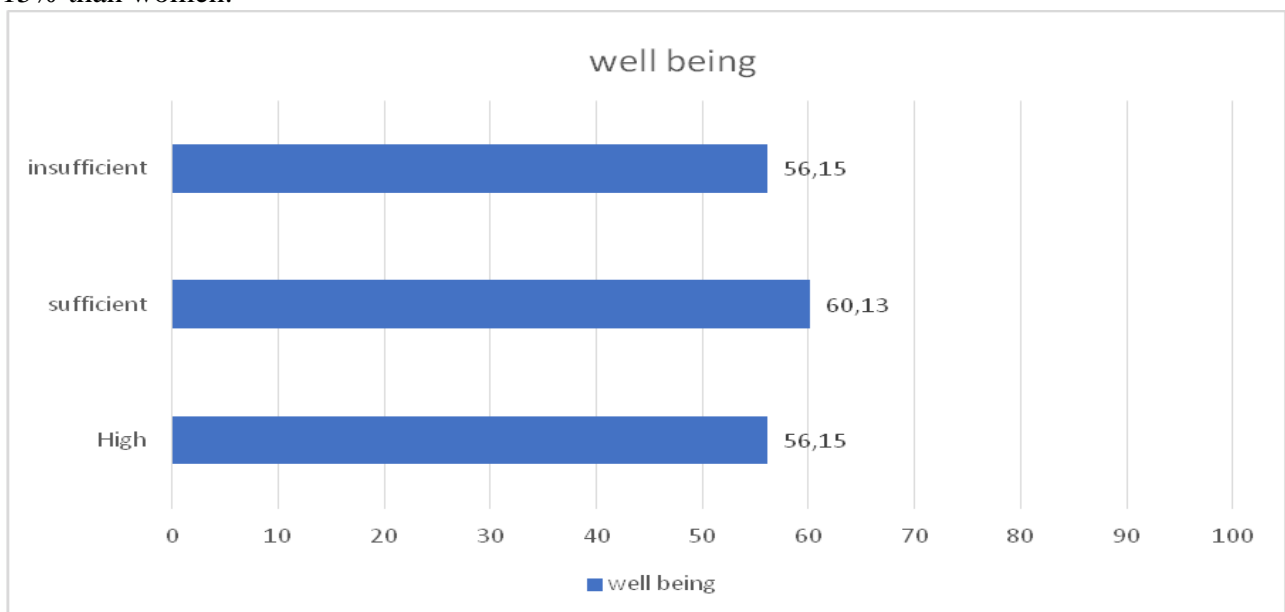


Chart 4. Impact of activity on the sense of mental health

Chart 4 presents the average results of individual groups classified on the basis of the IPAQ questionnaire in comparison to the group of SF - 36 questionnaire questions regarding well -being. The "sufficient" group has the highest quality of life in a given sphere 60,13. The group with high physical activity recorded the result of 56.15. The lowest sense of mental health is declared by the group with insufficient physical effort of 55.73.

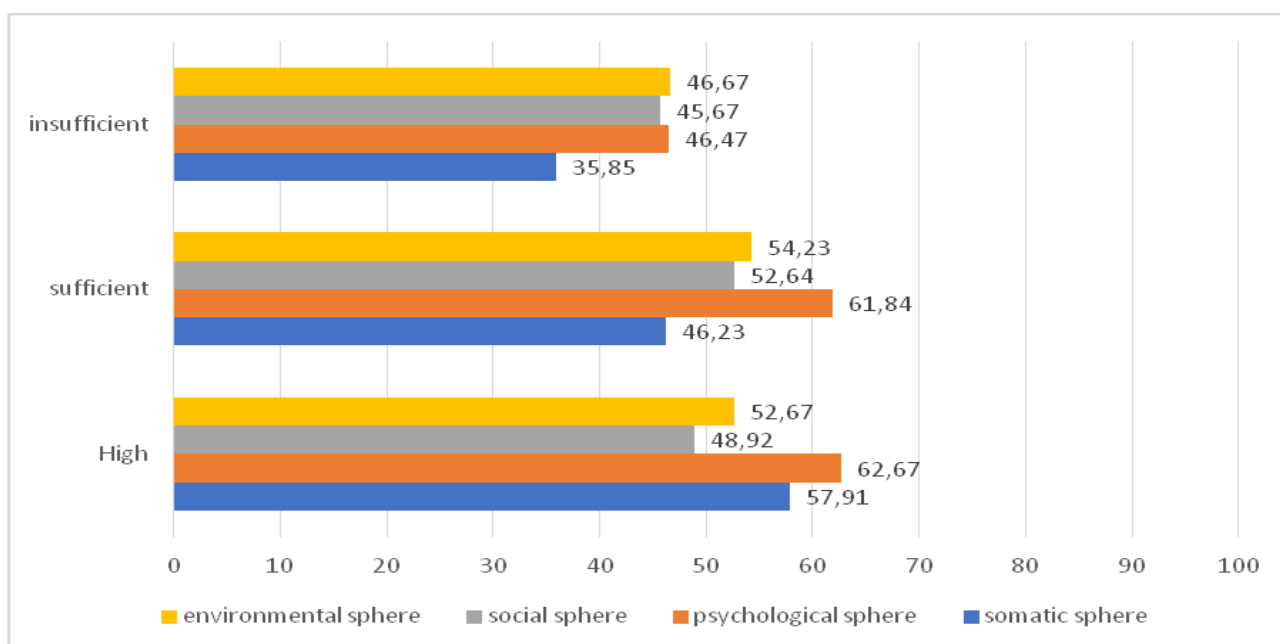


Chart 5. *Quality of life domains in given spheres in connection with the physical effort.*

In the environmental sphere, the highest quality of life is declared by people with sufficient physical activity of 54,23 while the lowest score gained insufficient group - 46,67. In the social sphere, the highest quality of life is declared by people with sufficient physical activity 52.64 and the lowest score shows insufficient physical activity which is 45,67. In the psychological sphere, people with high physical activity achieve the highest quality of life at 62,67. The lowest result was obtained by a group with insufficient physical effort of 46,47. In the somatic sphere, we can observe a "stepped" chart where the quality of life increases along with activity and for people from the "high" group it is 57,91, "sufficient" 46,23 and "insufficient" 35,85. The conducted research will allow to determine if the level of physical activity affects the quality of life of the residents of the Social Welfare Home. Based on a given research group, we will be able to determine which sex shows a greater need for increased physical effort and the impact of a given effort on each of the life spheres. We will also be able to determine the impact on the mental well-being of the subjects.

Discussion:

The presented data indicate the confirmation of the initial assumption that physical activity affects the quality of life. It should be noted that the research group included people who are not professionally active, so people in the group presenting "high" physical activity classified by the IPAQ questionnaire had to exercise more during their free time. An interesting fact is that the subjects usually overstate the self-assessment of the declared quality of life (question 1 in the WHOQOL questionnaire - bref) in relation to that estimated on the basis of the sum of points obtained for all quality of life domains from the remaining questionnaire questions. Physical activity is important in the physical and mental areas. In older people it is particularly important to maintain a good psychophysical condition through adequate physical activity as part of lifestyle [17]. Lampinen and co-authors have shown that well-being and mental well-being are closely related to physical activity, while our research shows that the highest level of quality of life in the context of well-being is demonstrated by subjects with sufficient physical effort. Lampinen and co-authors also suggest that regular exercise is the main factor preventing aging and affecting the well-being of the elderly [18]. Frya came to an interesting conclusion. He believes that the attitude to religion and spiritual life is undoubtedly important for mental and physical well-being of the elderly [29]. Many authors have been involved in linking physical activity with improving physical and mental condition. It is worth mentioning the surveys conducted by Gębska-Kuczerowska among people over 65 in which she showed that people with a higher degree of activity were less burdened

with cardiovascular diseases, and also less frequently used hospital care [12]. There are also researchers trying to explain the impact of physical activity on processes at the cell level. These include Cherkas and co-authors who have shown that the length of telomeres in the leukocyte chromosomes depends on physical activity [5]. No less interesting studies on the impact of physical activity on old people were carried out by Chipperfield. She tried to prove the hypothesis that aging causes a decline in daily physical activity. Unfortunately, based on our questionnaire we were not able to respond to that hypothesis [6]. Interesting research was carried out by Elżbieta Kozak - Szopek and Krzysztof Galus, who during two months conducted rehabilitation for 22 women aged 72-88. Based on the results they proved that even short-term physical rehabilitation improves the physical condition and mood of elderly women while our research was based on activity in everyday life but still we can find similarity between activity and physical rehabilitation [16]. Patients who exercised more than 3 days per week or made a moderate effort during 5 days of week had better mood. According to Marchewka and Jungiewicz's work, the level of physical activity in the developmental period of life has a positive effect on the quality of life in the elderly, but did not take into account the effort during old age [20]. However, in our research we have proved that people who are more active than their peers show a better quality of life. As Piątkowska proves in her research there is a visible relationship between age and the degree of intensity of recreational physical activity. The older the person, the less often he participates in intense physical activity undertaken in his free time [21]. This is found in relation to our work, which shows that only 10.7% of older people lead above "sufficient" in terms of physical activity. Druzicki and co-authors in their research claim that regularly used and appropriately selected physical activity for older people affects the increase of balance and walking speed, improves functional fitness. The resignation or lack of physical activity can lead to faster aggravation of balance and deterioration of quality life of older people [8]. In own studies a significant effect of physical activity on the quality of life in the somatic sphere was also demonstrated.

Conclusions :

- based on the conducted research high average values of the weekly MET-energy expenditure were obtained among respondents over 60 years of age
- well-being and subjective assessment of the quality of life of the subjects was dependent on physical activity. People who were accompanied by daily movements rated their quality of life higher
- women have a greater need for increased physical effort on the basis of a given research group
- seniors who presented the highest rate of energy expenditure assessed their health very highly

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