

# The influence of physical activity on life quality formation of elderly people

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**Purpose:** to analyze the relationship between various parameters of life quality and physical activity level of older Ukrainian citizens.

**Material & Methods:** 150 female aged 65,2±4,3 years were interviewed with MOS SF 36 and IPAQ questionnaire.

**Results:** it is shown the values of scales Emotional role functioning (44,0 points), General Health (51,4 points) and Bodily Pain (52,2 points) can be considered as critical.

**Conclusions:** statistically significant correlation between the numbers of metabolic equivalents used on physical activity during work (study), duration of active recreation was found.

**Keywords:** physical activity, quality of life, elderly people, leisure time.

## Introduction

Thereon the unsatisfactory social and economic conditions of aging of the population of Ukraine are followed by the essential deterioration in health, growth, the number of persons which needs the public and state aid. Understanding of the factors, which provide the formation of quality of life of elderly people, improve wellbeing of the population, promote attraction to the public life, will help to keep labor potential, will reduce financial expenses on the medical and social care and will continue life expectancy of Ukrainians.

The concept «quality of life» actively develops in the different field of science. Some of the known definitions have the general character – «awareness of own wellbeing by a person», «satisfaction or dissatisfaction with own life», «feeling of happiness or misfortune», others are based on objective and subjective indicators, or on the contrary, display only some components of wellbeing [1; 2; 7]. The last most often can be met in works which are devoted to health, physical activity and efficiency of a person.

Researches of the communication between physical culture and sport and quality of life are rather tightly directed. So, somatic health of a person remains the main object of studying. The subject of studying of such scientific researches is the communication between physical culture and sport and physical component of wellbeing, change, as life of different groups of the population which provide long-term sports and improving projects, which are specialized programs for rehabilitation of persons with sharp or chronic diseases and so forth [2–6; 8–10]. But, the package of questions which concern other aspects of physical culture, sport and quality life of the population is insufficiently reasonable. Among them are – mental health, cognitive abilities and level of physical activity; physical culture, sport, education and employment; trainings by physical culture and sport and prevention of asocial behavior; physical activity, social capital and social inclusion; physical recreation and quality of life and so forth. Studying of the communication between quality of life and physical activity

is necessary for the development of the special preventive programs which are directed to the formation of high level of wellbeing of persons of different age.

## Communication of the research with scientific programs, plans, subjects

The work is performed according to the basic scientific research at the expense of expenses of the state budget «The involvement of elderly people to sports and improving educational programs for the purpose of improvement of health and quality of life».

## The objective of the research

To analyze the communication between different parameters of quality of life and level of physical activity of elderly people.

## Material & Methods

150 women of the advanced age, who were students of University of the third age at Lviv state university of physical culture for the 2014–2015 academic years, are interrogated. The age of participants – 65,2±4,3 years old. Data of scientific literature [3–6; 8–10], and also own results, concerning the quality of life of respondents of mature age (450 teachers, age of 24-60 years old) are used for the comparison.

The quality of life, which is connected with health, was studied by means of the questionnaire of MOS SF 36. Indicators of wellbeing according to such scales were analyzed: “Physical Activity” (PA), “A role of physical problems in activity restriction” (RP), “The pain level” (P), “Vital capacity” (VC), “The general state of health” (GH), “Social Activity” (SA), “A role of emotional problems in activity restriction” (RE), “Mental Health” (MH).

The level of physical activity was studied with the use of the International Physical Activity Questionnaire, IPAQ. Energy consumption at work, at home, during movement and in free time was counted separately. The size of physical activity was calculated at MET (metabolic equivalent of task) that

answered the consumption of 3,5 ml of O<sub>2</sub> on 1 kg of weight in 1 min. 3,3 MET, 4,0 MET and 8,0 MET respectively was used on physical activity, insignificant, average and considerable behind power, within 1 min.

Results were studied statistically. The independent among themselves selections were compared to the help of the nonparametric test of Kruskal-Wallis. The correlation analysis was carried out according to Spearman. The differences at a significance value not lower than 95% (p<0,05) were considered reliable.

## Results and discussion

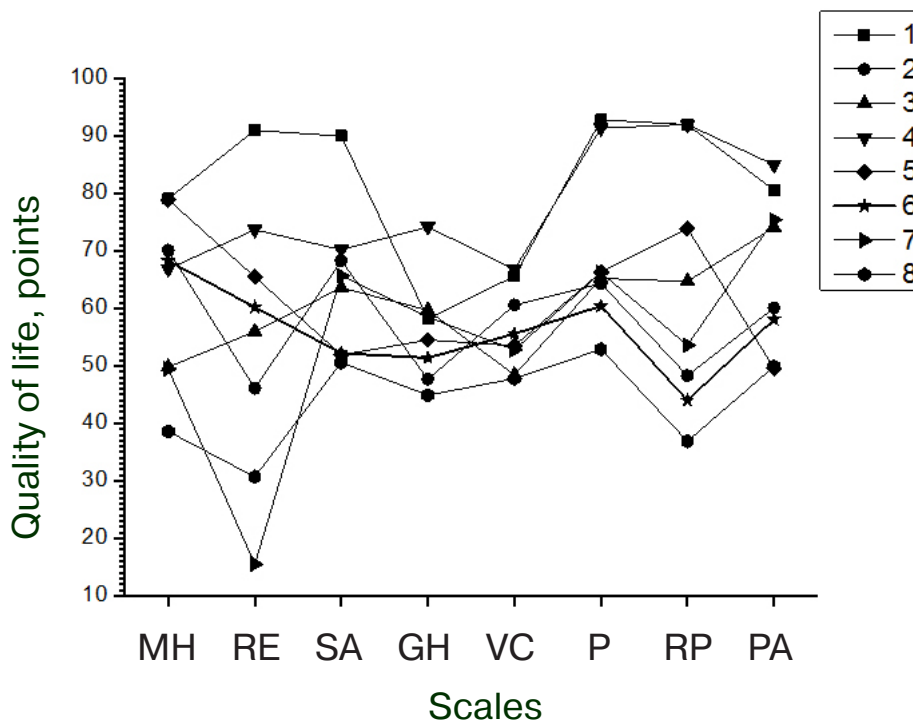
The quality of life of the Ukrainian respondents was compared to wellbeing of persons who lived in other countries of the world (pic. 1). It is revealed that the existence of sharp and chronic diseases – a major factor which significantly worsens a meaning of quality of life by all scales. So, wellbeing of elderly people after a stroke or at senior patients who have the disease of eyes, which is predetermined by diabetes, is made lower than 50 points by scales «Physical activity», «A role of physical problems in activity restriction», «The role of emotional problems in activity restriction». A meaning of quality of life of the Ukrainian respondents is one of the lowest and commensurable with data of patients with serious chronic illnesses.

But, indicators of wellbeing of residents of the People's Republic of China or the USA are rather high. A meaning by a scale "Physical activity" makes 74–94 points, "A role

of physical problems in activity restriction" – 73–95 points. Indicators of scales which correlate with the general mental component ("Mental health", "A role of emotional problems in activity restriction") make over 85 points. The exception can be considered results for a group of persons which are in specialized institutions. The senior people, who need a continuous examination, have low meanings according to all scales of quality of life. Indicators of wellbeing are in range of 36,9-52,9 points, in particular, a meaning of the "Role of emotional problems in activity restriction" parameter (36,9 points) and "Mental health" (49,9 points) are very low.

Results of the poll of the Ukrainian respondents testify to vital issues with a functional state and its restrictive influence on the daily activity. Meanings of wellbeing by the majority of scales are critical: «A role of emotional problems in activity restriction» – 44,0 points, «The general state of health» – 51,4 points, «Pain» – 52,2 points. But, indicators of scales «Mental health», «Social activity», that «Vital capacity» is higher and make 58,1 points, 60,4 points and 55,6 points, respectively. Low indicators which characterize the general mental to a component of wellbeing of elderly people and also its separate parameters, in particular, a meaning by a scale «Mental health» (58,1 points), «A role of emotions in daily activity» (44,0 points), «Social activity» (60,4 points) testify about certain negative welfare tendencies in the Ukrainian society – a negative perception of an old age, a restriction of activity of senior persons, their dependence on younger family members and so forth.

Physical activity of adult respondents was analyzed at work



**Pic. 1. Quality of life of elderly people:**

1 – citizens of the People's Republic of China (age >60 years) [4]; 2 – respondents from the People's Republic of China (age >55 years, suffer on a diabetic retinopathy) [8]; 3 – respondents from the USA (age – 77 years, problems with hearing) [10]; 4 – respondents from the USA (age – 78 years) [6]; 5 – respondents from Poland (age – 45–65 years) [9]; 6 – respondents from Ukraine (age – 65 years, own data); 7 – citizens of Sweden (age – 74 years, patients after a stroke) [3]; 8 – respondents from Iran (age – 60 years, patients who are in specialized institutions for elderly people and need continuous examination) [5].

(on study), at home, a plant area during rest and movement from one place to another. All kinds of physical work which they performed within the last week asked to remember participants of the research. Respondents of a mature age at work spent 45,6% of total of Met-year/week, during a movement – 11,5%, houses (in particular, on a plant area) – 32,5%. These meanings made 30,9%, 19,9%, 36,8% respectively at elderly people. The senior respondents in off-duty time spent 12,4% of total of metabolic equivalents for physical activity, and respondents of a mature age – 10,4%. Differences in absolute meanings of the given indicators were observed. In particular, the general level of physical activity at persons of a mature age made 283,1±20,2 MET-year/week, at elderly people – 179,6±15,8 MET-year/week.

Correlation coefficients, insignificant and average by size between quantities of the metabolic equivalents are found, which were spent for a physical activity during work (study), movements, at home, in free time and quality of life (tab. 1). The greatest meanings are characteristic of parameters physical activity at work and scales «Physical activity» (r=0,48), «Social activity» (r=0,54) and «Mental health» (r=0,43), activity which is connected with a movement and an indicator «The general state of health» (r=0,71).

Physical activity of at home, it is similar as well as spending of free time passively, or long sedentary work influences negatively some components of quality of life. So, negative correlation connections are found for the parameter “Physical activity of the house” and scales “Pain” (r=-0,34), “A role of emotional problems in activity restriction” (r=-0,41), “Mental health” (r=-0,51); “Time, carried out sitting” and “Physical activity” (r=-0,28), “A role of physical problems in activity restriction” (r=-0,41), “Social activity” (r=-0,34). But, the growth of duration of active recreation is connected with the increase in quality of life of elderly people. Reliable correlation

connections are found for the meaning of scales “Physical activity” (r=0,63), “A role of physical problems in activity restriction” (r=0,58), “The general state of health” (r=0,35), “Social activity” (r=0,51), “A role of emotional problems, in activity restriction” (r=0,41), “Mental health” (r=0,49).

## Conclusions

The quality of life of elderly Ukrainians is low, indicators of scales «A role of emotional problems in activity restriction» (44,0 points), «The general state of health» (51,4 points), «Pain» (52,2 points) are possible to consider critical. The majority of indicators are commensurable with the data of respondents of the advanced age who live in other countries of the world and have chronic diseases.

The statistically reliable and average by size coefficients of correlation between quantity of the metabolic equivalents are found, which are spent for physical activity during work (study) and meanings of scales, «Physical activity» (r=0,48), «Social activity» (r=0,54) and «Mental health» (r=0,43), and also the activity which is connected with a movement and an indicator «The general state of health» (r=0,71). The quality of life of elderly people depends on a duration of active recreation – correlation coefficients for scales «Physical activity», «A role of physical problems in activity restriction», «The general state of health» (r=0,35), «Social activity», «A role of emotional problems, in activity restriction», «Mental health» were in range of 0,41-0,63.

## Prospects of the subsequent researches

Consist in introduction of sports and improving projects for elderly people that will promote the formation of skills which are necessary for healthy lifestyle that, in turn, will positively influence the quality and duration of life.

**Table 1**  
Correlations between quality of life and level of physical activity of elderly people

Parameters according to the International questionnaire for the determination of level of physical activity	Scale of quality of life							
	MH	RE	SA	GH	VC	P	RP	PA
Physical activity:								
at a work (during a study)	0,48*	0,34*	0,02	0,32*	0,41	0,54*	0,01	0,43*
connected with movement	0,12	0,13	0,34	0,71*	0,39*	0,20	0,34*	0,11*
at home (on a plant area)	0,42*	0,13*	-0,34*	-	-	-	-0,41*	-0,51*
in free time	0,63*	0,58*	0,11	0,35*	0,11	0,51*	0,41*	0,49*
Time of spending, sitting	-0,28*	-0,41*	-0,19	0,14	-	-0,34*	-	0,31

**Note.** “\*” – a reliable correlation, p<0,05

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