Assessment of the physical condition and standard of living of elderly people

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Dr. Hab., Professor **O.E. Evseev**[1]
PhD, Associate Professor **E.B. Ladygina**[1]
[1]Lesgaft National State University of Physical Education, Sport and Health, Saint Petersburg

Corresponding author: o.evseeva@lesgaft.spb.ru

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Abstract

Objective of the study is to assess the physical functioning and quality of life of senior citizens based on the monitoring results.

Methods and structure of the study. Testing was conducted in accordance with the technical specifications of the research work on the stated topic and included: analysis of regulatory documents on the problem of active longevity; monitoring the level of physical functioning and quality of life of senior citizens aged 60 to 78 years to identify the main approaches that can create conditions for the formation of an interested attitude of senior citizens to systematic physical education (PE) classes and motivation for active longevity.

In order to determine the level of physical functioning, a battery of tests was used, including an assessment of walking speed, balance and a test with rising from a chair (The short physical performance battery, SPPB). To determine the level of quality of life, the SF-36 Health Status Survey quality of life assessment questionnaire was used.

Results and conclusions. The conducted testing allows us to state that PE classes significantly improve the physical functioning of older people and increase their quality of life. In particular, subjects involved in physical culture demonstrated higher rates of walking speed, balance, and lower limb strength. They do not have signs of frailty syndrome, unlike those not involved in physical culture.

The results of the survey using the SF-36 Health Status Survey questionnaire showed that those involved in physical culture perform everyday activities (walking, climbing stairs, etc.) more easily, and their subjective health assessment is higher than that of those not involved in physical culture.

Therefore, conditions should be created to develop interest in physical culture, health-preserving behavior, and motivation for active longevity in elderly people by means of adaptive physical culture, taking into account age restrictions on health in the contingent. Particular attention should be paid to the development of motivation for active longevity in the age groups of 65-69 years and 70-74 years, where the maximum spread of physical functioning indicators and quality of life (general physical component) was recorded.

Keywords: *older people, physical functioning, motivation formation, prolongation of active longevity, health and quality of life, adaptive physical education.*

Introduction. At present, the state policy in Russia is aimed at prolonging the active and healthy longevity of citizens of our country. A number of regulatory documents and national projects, in particular the National Project "Long and Active Life", are aimed at solving this problem.

Objective of the study is to assess the physical functioning and quality of life of older citizens based on the monitoring results.

Methods and structure of the study. As part of the implementation of the National Project "Long and Active Life", employees of NSU named after P.F. Lesgaft, St. Petersburg organized research work to fulfill the 2nd stage of the state assignment for conducting research work on the topic: "Development of scientifically based proposals for the formation of motivation in older citizens (taking into account sensory, motor and mental disorders) for active longevity by means of adaptive physical culture."

The study involved monitoring the level of physical functioning of elderly people aged 60 to 78 years and questioning senior citizens to determine the quality of life of the contingent, both those involved in physical education (PE) and those not involved. Since this age

range of the senior generation is quite large and by the age of 78 a person's psychophysical capabilities are significantly reduced, the elderly subjects who took part in the study. The group of subjects was divided into four age subgroups: 60-64 years; 65-69 years; 70-74 years; 75-78 years. Elderly people (n=219) took part in the testing. Of these, 118 were involved in physical education at Sports Centers, Comprehensive Social Service Centers, and fitness clubs; 101 were not involved in physical education.

The following were used in the study: a method for testing the physical functioning of elderly people aged 60 to 78 years using a short physical performance battery (SPPB); a survey method in the form of a questionnaire among elderly people to determine the level of quality of life using the SF-36 Health Status Survey; mathematical and statistical methods (using the Mann-Whitney U-test).

To determine the level of physical functioning, a battery of tests adopted in geriatrics was used, which includes three tests: the 1st test evaluates walking speed; the 2nd test is aimed at determining the level of balance; the 3rd test (rising from a chair) evaluates the condition of the joints and the strength of the lower limbs. All tests are focused on the functional state of the lower limbs of elderly people, since it is the decrease in this indicator that leads to an increased risk of falls [1].

Results and conclusions. The results of testing their physical functioning are presented in Fig. 1.

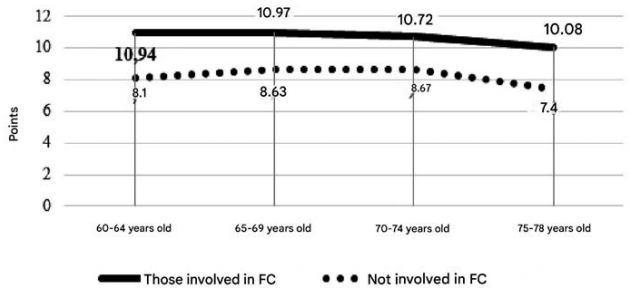

Fig. 1. Physical functioning indicators of elderly citizens engaged and not engaged in physical culture using the short physical performance battery, SPPB

The graph shows the difference in the physical functioning (PF) indicators of subjects who are engaged in FC and who are not engaged in FC, in favor of those engaged in FC. In all age periods, elderly people leading an active lifestyle do not have the syndrome of senile asthenia. People not engaged in FC have a state of preasthenia syndrome. By the age of 78, there is a tendency for PF indicators to decrease in representatives of all age ranges, both engaged and not engaged in FC, but in those engaged in FC in the corridor of the absence of signs of asthenia syndrome, in those not engaged in FC – in the corridor of the presence of signs of asthenia syndrome.

The differences in PF indicators are reliable ($p<0.05$), except for the data in the age period of 65-69 years, where the results are insignificant. In this age period, the subjects show a wide range of FF data. The greatest differences in the FF indicators of those involved and not involved in physical culture are observed in the age periods of 60-64 and 70-78 years. This may be due to the fact that in early old age people are still quite energetic and continue their professional activities, which ensures a fairly high level of FF. By the age of 78, most representatives of the older generation retire and lead a less active lifestyle, the number of chronic diseases that limit the physical capabilities of an elderly person also increases, and the risk of falls increases.

To determine the level of quality of life of elderly people, the questionnaire "SF-36 Health Status Survey" [2] was used. The elderly person's subjective perception of his quality of life, health and well-being were studied. The indicators of the general physical health component (PH) were determined, reflecting the degree to which the physical condition of an elderly person limits his performance of physical activity, everyday manipulations; role functioning, and also shows the presence and intensity of pain, general health [2].

The survey involved elderly citizens (n=241 people). Of them: those involved in physical training in Sports Centers, Comprehensive Social Service Centers, fitness clubs – 118 people; those not involved in physical training – 123 people. The survey results are presented in Fig. 2.

The obtained empirical data allow us to state that physical training improves the quality of life of an elderly person. Thus, Fig. 2 shows that elderly people who are not involved in physical training have a lower subjective perception of their health than those involved in physical training in all age ranges. It is more difficult for them to perform everyday manipulations, walk, climb stairs, carry heavy objects, etc. Moreover, the most significant reliable differences in PH indicators were recorded in the age range of 60-64 years ($p<0.05$), smaller and insignificant in the age range of 70-74 years. Perhaps this is due to the large spread of

PH indicators of the subjects of this age. Just as in the indicators of physical functioning (Fig. 1), by the age of 78 there is a tendency for indicators to decrease in representatives of all age ranges involved in physical culture.

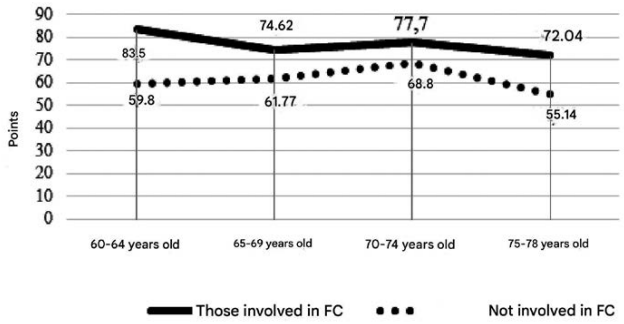

Fig. 2. Physical health (PH) indicators according to the SF 36 quality of life scale for older people who do and do not do physical exercise

Conclusions. The study suggests that physical education significantly improves the physical functioning of older people and increases their quality of life. Thus, subjects who do physical education demonstrated higher indicators in the short physical performance battery (SPPB) tests of walking speed, balance, and lower limb strength in all age groups (60-78 years). And they do not have signs of frailty syndrome, unlike those who do not do physical education.

The results of the survey using the questionnaire "SF-36 Health Status Survey" showed that those involved in physical culture perform everyday activities (walking, climbing stairs, etc.) more easily, and their subjective health assessment is higher (physical component of health (PH) than those not involved in physical culture. Age dynamics of PH indicators on the quality of life scale "SF 36" were also revealed. Thus, in both groups after 70 years there is a decrease in indicators, but in those involved in physical culture it is less pronounced. The largest gap between the groups was recorded in the categories of 60-64 years and 70-78 years, which in the first case is most likely associated with the preservation of physical activity in working elderly citizens, in the second – with the increase in involutional processes in the body by 78 years and the accumulation of chronic diseases and their progression, especially in inactive elderly people.

Thus, it can be concluded that when forming motivation in older people for active longevity, it is necessary to create conditions for involving older people in regular physical culture classes. taking into account their age restrictions on health, paying particular attention to the age groups 65-69 years and 70-74 years, where the maximum variation in indicators of physical functioning and quality of life (general physical component) was recorded.

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