

# The influence of organized motor activity on the health indicators of mature women

S.S. Gulyaeva<sup>1</sup>, V.R. Abramova<sup>1</sup>, L.I. Voloshina<sup>2</sup>, and M.I. Sentizova<sup>3</sup>

<sup>1</sup>Churapchinsky State Institute of Physical Culture and Sports

<sup>2</sup>Belgorod State National Research University

<sup>3</sup>North-Eastern State University named after M.K. Ammosov

**Abstract.** The relevance of the research is due to the situation in the modern world, characterized by socio-economic instability, adverse environmental factors, the introduction of restrictive measures caused by the spread of coronavirus infection and, as a consequence, tense psycho-emotional atmosphere in society, paradigm shift in thinking and reduction of motor activity of the population. Modern conditions of life with its urbanization, mechanization and automation, computerization of labor, the development of communications, transportation, and household appliances, have not bypassed the female half of mankind. The fight against sedentary lifestyle, hypodynamia and hypokinesia has become an acute social problem. Special attention of specialists requires the involvement of the population in motor activity as a means of preserving health in the conditions of the region with a cold climate, where harsh conditions do not affect in the best way the well-being of people. The problem of preservation of the person in extreme conditions of the North is a subject of scientific researches by the representatives of medicine and pedagogical science. This paper puts into practice the idea of improving the quality of women's health in a specially created wellness environment, considering their age characteristics and motivational and value potential.

## 1 Introduction

Socio-cultural and economic regional peculiarities can influence the resources and adaptation strategies of the population [1]. The phenomenon of motor activity is considered in modern studies as a biological need of the body, a stimulus for individual and social development, a source of life support, and quality of life. The Center for Disease Control and Prevention has developed recommendations for the organization of physical activity, which state: "... it is recommended that the adult should engage in moderate physical activity at least 30 minutes several times a week, preferably every day." These recommendations were widely accepted in Europe and around the world [2, 3]. It has been proven that the risk of premature death can be reduced by moderate physical activity, performed in oxygen mode, for a total of 150 minutes per week. Such exercises are the prevention of cardiovascular diseases, diabetes mellitus and depressive disorders. Exercises of 300 minutes per week can be a preventive measure against obesity and cancer [4].

Several authors have established the existence of correlations between the indices of motor activity and health [5-7]. There is convincing evidence that physical activity is an effective way to reduce fatigue [8, 9]. The organization of a healthy lifestyle by means of health-improving physical culture, taking into account the needs of people of different ages, gender and other socio-demographic characteristics, contributes to the increase in motor activity of the mature population [10].

The example of the Republic of Sakha (Yakutia) shows that the problem of strengthening the health of the female population with the help of proven means of strengthening and improving performance (the optimal motor mode) is very relevant. However, there are not enough practical recommendations for organizing regular classes with accessible physical exercises. Consideration of the research problem allowed us to discover a contradiction between the variety of means, methods and conditions of physical improvement of a person and the absence of a scientifically sound systematic approach to their application, taking into account regional features, characteristics of indicators of physical condition and the motivational and value potential of the population in relation to motor activity.

The aim of our study was to scientifically substantiate the positive impact on the health of mature women of organized forms of motor activity based on dosed walking with poles in combination with general developmental exercises of complex orientation, including exercises with Nordic ski poles from different starting positions. In the course of a pedagogical experiment lasting one calendar year, conducted in the conditions of a fitness association of women living in rural areas of the Republic of Sakha (Yakutia), along with the basic means of motor activity modern means of regulating activity parameters were also tested.

The hypothesis of the study was based on the assumption that the optimal selection of health-improving means and the regulation of motor activity will positively affect several indicators of the physical health of mature women and will be a prerequisite for the formation of a culture of movement, motivation and interest in regular exercises.

## **2 Materials and methods**

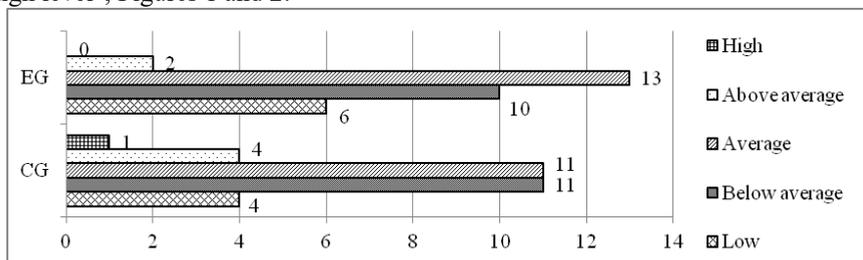
The study was conducted in rural areas of the Republic of Sakha (Yakutia), with the participation of women of the second mature age (62 people). Taking into account the principle of wellness orientation, health status, age and level of physical fitness, students were offered individual training programs that focused on the development of aerobic capacity and strength abilities of the body. A mandatory component of motor activity was the use of modern information technologies for the regulation of volume of movements, time interval of activity, intensity, energy consumption during physical exertion. For this purpose, mobile applications were used to record locomotion using mobile gadgets with built-in sensors (accelerators), with the presence of navigation trackers and accessories in the form of software. Electronic and paper versions of the self-monitoring diary were used to track several parameters of physical and psycho-emotional state.

To assess the degree of influence of wellness classes on the quality of health of the participants of the experiment, an express assessment of the state of general health was carried out according to the method of G.L. Apanasenko [11]. In this method, the integral indicator is derived based on the following primary data: height, weight, vital capacity of the lungs, pulse, dynamometry of the hand, systolic pressure level and pulse recovery time after the test (20 squats in 30 seconds.)

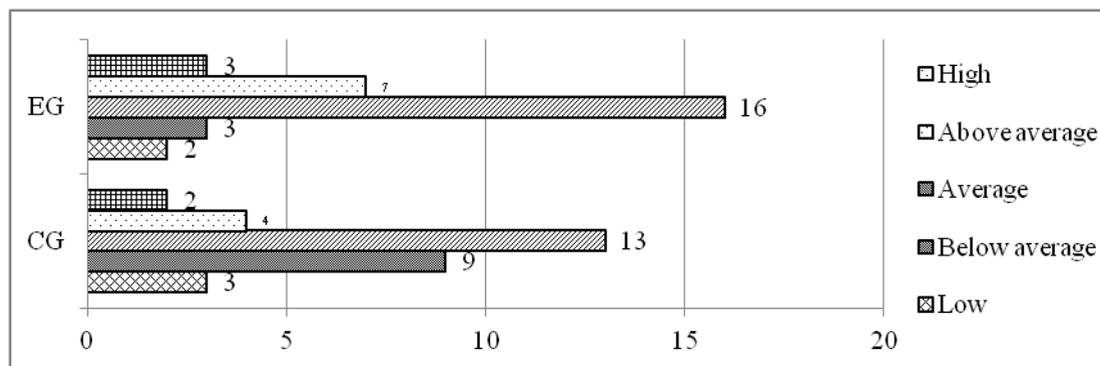
### 3 Results and discussion

The results of the study, based on the experimental approbation of the proposed method of classes, made it possible to improve some the health parameters of the students, which indirectly also had a positive impact on their self-esteem, emotional state, increased motivation for physical improvement, preservation and strengthening of health.

The level of health of the subjects was assessed in points. Each result obtained with the corresponding measurements was assigned a score. At the end of all measurements, the points obtained were summed up and a total health score was obtained. The health being was graded as follows: "low level", "below average level", "average level", "above average level", "high level", Figures 1 and 2.



**Fig. 1** - Comparative results of the general level of health of the subjects of the control (CG) and experimental groups (EG) before the experiment (n=62)



**Fig. 2** - Comparative results of the general level of health of the subjects of the control and experimental groups after the experiment (n=62)

The results obtained show that, in comparison with the ascertaining stage, the number of students with the "low" level of health decreased by 1 people in the control group and by 4 people in the experimental group. The number of subjects with the health indicator "below average" decreased in by 2 in CG and by 7 EG. The number of subjects with an "average" level of health changed in CG from 11 to 13 and from 13 to 16 in EG. The number of subjects with the "above average" health indicator remained unchanged in the control group and increased by 5 in the experimental group. The number of subjects with the "high" level of health increased by 1 in the control group and by 3 in the experimental group.

### 4 Conclusion

It has been proved that classes based on moderate aerobic loads in combination with exercises of restorative and general developmental nature do help to maintain, and in some

cases improve, the physical and functional state of the organism. This is evidenced by previous scientific research [12, 13].

The performed pedagogical experiment allowed us to determine the beneficial effect of recreational walking in an open area on the activity of the cardiovascular and respiratory systems. An improvement in the response of the women's body to physical exertion was noted. It was established that the high health-improving effect of classes is achieved through the global character of muscle activity when performing motor actions and considerable energy consumption in the process of this activity. This effect is even more intensified when students are in the natural environment, outdoors, taking into account the climatic seasonality of the northern region. In the future, to increase the effectiveness of health-improving training and comprehensive impact on the body of mature women, it is promising to put into practice knowledge from the field of nutrition in order to regulate the diet and popularize the practice of healthy eating.

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