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**IMPROVEMENT OF THE SYSTEM OF PHYSICAL
TRAINING IN THE ARMED FORCES OF UKRAINE
IN THE CURRENT CONDITIONS AND BRINGING
THEM IN LINE WITH THE STANDARDS OF THE ARMIES
OF NATO MEMBER-STATES**

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WAYS TO IMPROVE WORKING ABILITY AND STRENGTHEN HEALTH OF AGED OFFICERS

Regulatory documents on physical training in the Armed Forces of Ukraine and Internal Affairs agencies of Ukraine indicate that one of the main tasks of aged officers of the group 6 and higher, lecturers of higher educational institutions, and officers of administrative department (military officers) is to strengthen health and maintain high professional working ability [1,4].

Professional activity of the aged officers, officers of administrative department, and lecturers of higher educational institutions is usually performed in the conditions related to extensive mental workload, continuous growth of information volume, high level of responsibility for the outcome of their activity, overload of intellectual aspect of the work, high nervous and emotional tension at low level of motor activity. These factors bring to aggravation of cardio respiratory system, supporting-motor apparatus, metabolic disorders, increase of the body mass; deterioration of values of important profession qualities; decline of the general health state, working ability, and efficiency of professional activity [1,2,4,5].

In their works, many scientists stress decline of the health state of the population in Ukraine in conditions of social, economic, and political instability. By the rate of depopulation, Ukraine occupies the 2nd place in the world, 1-2 place in Europe by mortality rate due to cardiovascular

system diseases. Over recent 20 years, a share of male population in Ukraine that is in the “safe health zone” has decreased from 8 to 1%. Probability of deaths in men aged is 38,4% representing one of the worst index among civilized countries in the world. By life expectancy index Ukrainian men occupy 135th place in the world.

At the same time, only 13% of Ukrainians do sports or physical workouts, while in Scandinavian countries this index is 75-80%. Currently, over 80% of lethal consequences of diseases at middle and advanced age is due to hypertension, atherosclerosis, and obesity [1,2].

It is proved that physical health, working ability, professional longevity are effectively formed by doing regular physical exercises. A big number of methods, programs, and gears for physical workout, physical education and sports have been developed intended to maintain good health state, mental and physical working ability, and prolong professional longevity.

To achieve the above objectives, traditional methods may be combined with isometric exercises, during which muscles are strained without their contraction [2,5]. Muraveynik M.S. (Chernihiv) has developed and patented designer gym machine called “Sukhozhyly” and methods of isometric exercises to develop and strengthen all body muscles, improve working ability and recovery after injuries [3,7]. Efficiency of the gym machine was tested at the Korolyov Zhytomyr Military Institute and the National Academy of Internal Affairs (Kyiv). 22 persons aged 35-60 took part in the research. Duration of the experiment was 12 months. The participants of the experiment were offered complexes of exercises on the gym machine to be done 3 times a week in a day during 10-15 minutes. At the beginning and at the end of the experiment, the participants were interviewed on effectiveness of methods and a complex of the exercises offered. From time to time, at the beginning and at the end of each training session the values of heart rate and blood pressure were registered.

Unlike other gym machines, designer’s gym machine “Suhozhil” is designed to do vast range of exercises to develop muscles and tendons of the whole body. The gym machine is composed of two pillars placed vertically at a certain distance one from the other that is equal to the average wide of shoulders of a person. The pillars have holes of the same diameter. The pillars are connected by three plaques (at the level of knees, elbows, and head) with the holes similar to the holes in the pillars. Cylinders that have to be squeezed or stretched according to the designer’s training methodic are inserted into the holes in turn. Due to such construction cylinders may be placed at a required level and in a position that allows ensuring application of isometric load to different groups of tendons and muscles of the whole human body in turn. The gym machine is made of natural wood, occupies small space, may be installed in a gym as well as in residential premises, safe and simple in operation.

Main points of methodic of exercises on this gym machine are: number of exercises – 8-10, number of circles in each exercise – 2-3; duration of each exercise – 4-5- sec; rest between the circles and exercises – 5-10 sec (2 inhales-exhales); efforts applied to perform the exercise – 20-30% (of nominal 100%); all exercises are performed as you exhale. In 6 months of regular training

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duration of exercises was increased up to 5-6 sec; efforts – up to 50% and 2-3 exercises were replaced with new ones [3,5,6].

Main advantages of the gym machine “Suhozhil” are its universality: it provides opportunity to do exercises for strengthening muscles and tendons of the whole body; requires minimum time

for workout (duration of the workout – 10-15 minutes that makes all together 30-40 minutes per week); minimal load on the body (heart rate meets initial values); possibility to install the gym machine in any premises; vast age range of those who can use it; number of exercises that can be done on it is limitless.

It is important to note that selective registration of the values of heart rate and blood pressure of the participants of the experiment before and after the exercises on the gym machine showed practically no raise in values of the parameters of cardiovascular system under control: fluctuation makes 2-5%. It is explained by the fact that any strain during exercises was done at exhaling.

It should be also noted that over 90% of interviewed participants of the research stated that they felt increase of forces in their muscles and felt better, and confirmed decrease (or complete absence) of pain (in the vertebral column, joints, etc.) during training on the gym machine that prove rehabilitation effect of exercises on the gym machine (feedback from the persons who had injuries and had a rehabilitation course on the gym machine “Suhozhil” is available on the web site [7]). At the same time, many participants stated that trainings in the gym machine do not cause fatigue, take reasonable time, and have impressive impact in general health condition.

Thus, the research confirms effectiveness of isometric exercises on the gym machine “Suhozhil” for improving general health state, working ability, and professional longevity of the aged persons.