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**“JISMONIY MADANIYAT SOHASIDA TA‘LIM VA
O‘QITISH SIFATINI TAKOMILLASHTIRISH:
MUAMMO VA YECHIMLAR”**

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ОБРАЗОВАНИЯ И ПРЕПОДАВАНИЯ В
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И СПОРТА: ПРОБЛЕМЫ И РЕШЕНИЯ»**

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СЕКЦИЯ 2. ФИЗИЧЕСКАЯ КУЛЬТУРА В СИСТЕМЕ ВЫСШЕГО
ОБРАЗОВАНИЯ, СОВРЕМЕННЫЕ ИННОВАЦИОННЫЕ
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КАЧЕСТВА ПРЕПОДАВАНИЯ

SECTION 2: PHYSICAL CULTURE IN THE HIGHER EDUCATION
SYSTEM, MODERN INNOVATIVE TECHNOLOGIES AND TEACHING
METHODS TO IMPROVE THE QUALITY OF TEACHING

MODERN PROBLEMS OF OPTIMIZATION OF LOADS IN THE
PROCESS OF THE NEUROMUSCULAR SYSTEM RE-ADAPTATION OF
STUDENTS WITH HYPOKINESIA

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Annotation. The search for effective mechanisms to improve the functional capabilities of students' organisms is one of the priority issues among scientists and practitioners in this area of research. The article presents the results of a survey of specialists in physical rehabilitation, power fitness, and physical education teachers. The issues of optimal parameters of the main components of the workload that will positively affect the processes of re-adaptation of the neuromuscular system of students with hypokinesia were considered. The combinations of the main component parameters that affect the mode of physical activity proposed by physical rehabilitation specialists and physical education teachers contradict the general physiological processes of adaptation in these conditions of muscle activity. At the same time, the representatives of power fitness indicated the optimal variant of the parameters of the main components of the physical activity regimen, which would contribute to the neuromuscular system re-adaptation of students with hypokinesia in the shortest possible time.

Keywords: hypokinesia, survey, load, students, adaptation

Introduction. Seeking optimal mechanisms of increasing functional reserves of the organism of people with hypokinesia in the process of re-adaptation of the

neuromuscular system to a physical stimulus is one of the most urgent and challenging problems in modern kinesiology, physical rehabilitation, and physical education [1, 4, 6, 7].

The manifestations of hypokinesia detected in the process of diagnostics in first-year students clearly reflect the mechanisms of neuromuscular system maladaptation due to hypodynamia and additional external factors [2, 3, 8]. The scientific literature available to us [4, 5, 9] presents results that reflect the peculiarities of the influence of different modes of physical activity on the nature of adaptive body changes in students with a low level of motor muscle unit activity and severe atrophy of the corresponding muscle group. The analysis of scientific works [2, 6] shows that against the background of neuromuscular system maladaptation during hypodynamia, reserves of main energy substrates decrease simultaneously, especially in conditions of anaerobic modes of energy supply.

Thus, determining the optimal variation of physical activity components that can be used in developing models of physical activity regimes will effectively affect the process of the neuromuscular system re-adaptation of students with hypokinesia and increase their energy reserves. But this problem remains unresolved.

The purpose of the study. To determine the main variations of physical activity regimes used in the process of the neuromuscular system re-adaptation of students with hypokinesia based on the analysis of the survey results.

Material and methods of research. The survey involved 45 respondents who were divided into 3 groups of 15 people each. Representatives of Group 1 are physical rehabilitation specialists who deal with the processes of restoring the neuromuscular system in people with various pathologies. Group 2 participants are physical education teachers at the university. Group 3 included power fitness specialists who study in-depth the physiological processes of adaptation under conditions of power loads. The survey determined the participants' opinions on the optimal parameters of load, types of energy supply for muscle activity, the priority of using various exercises, and their focus on the development of physical qualities. The survey results were analyzed and compared with the data of leading scientists who study the neuromuscular system re-adaptation of people with hypokinesia. The research was conducted at the Academician Stepan Demianchuk International University of Economics and Humanities, Rivne, UKRAINE

Results of the research. Figure 1 graphically presents the survey conducted among study participants concerning optimal parameters of workload modes that should be used by students with hypokinesia in the process of their re-adaptation.

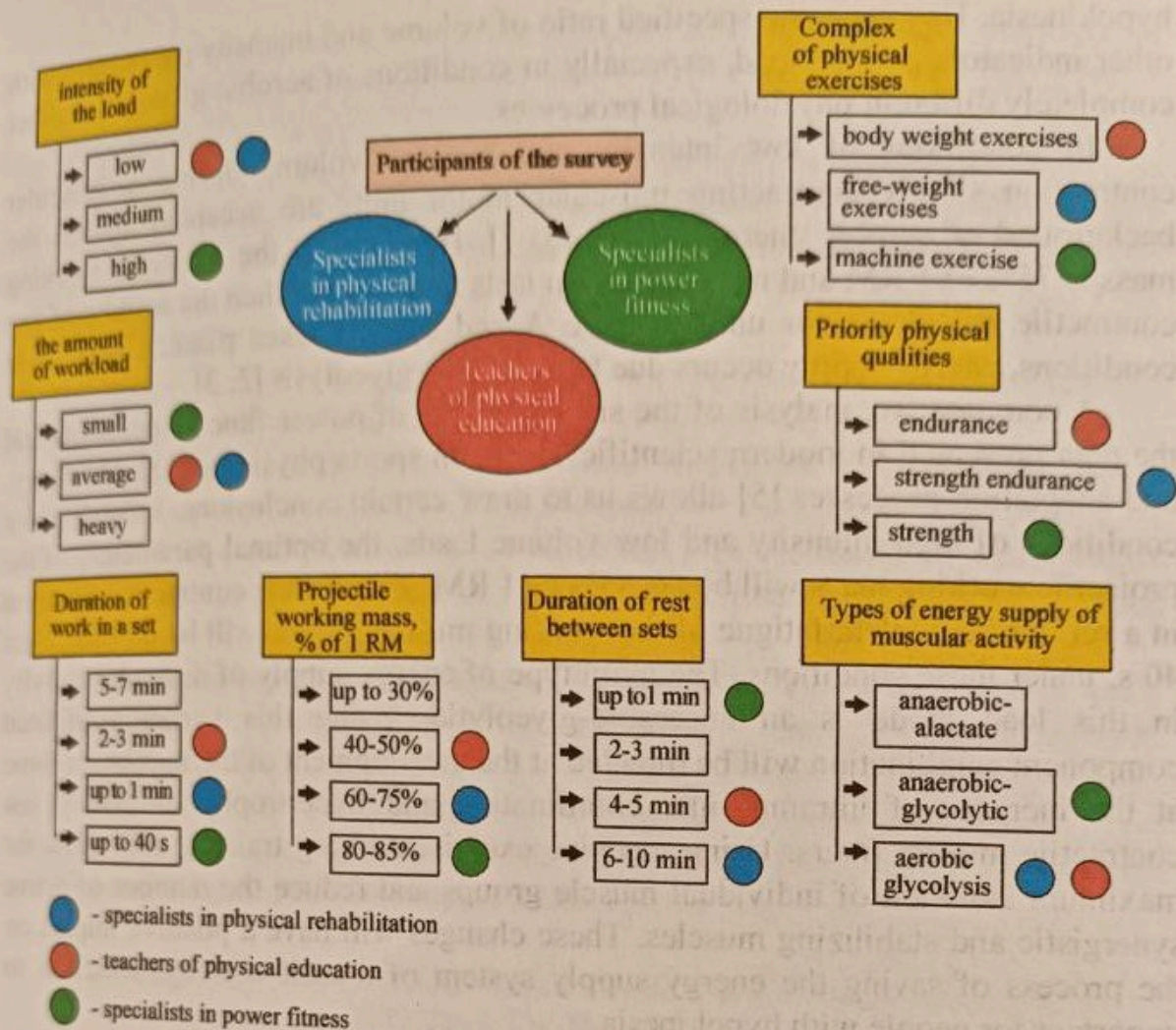


Fig. 1. The survey results concerning optimal parameters of load modes that should be used for students with hypokinesia in the process of re-adaptation, n=45

The study showed that the surveyed physical education teachers adhered to the standard combination of load components for most physically healthy students. This was noticed in answers concerning the level of intensity and volume of loads, and projectile working mass which should be used by students with hypokinesia in conditions of aerobic energy supply of muscular activity. At the same time, the specified parameters of the work duration in a set (2-3 min) did not correspond to the time characteristics of the beginning of aerobic glycolysis activity and could not influence the development of organism endurance. Consequently, the variant of the physical activity regimen proposed by this group of participants will not allow for achieving the desired effect in the process of the neuromuscular system re-adaptation of students with hypokinesia.

Analyzing the answers of physical rehabilitation specialists, we observed a similar variation in the parameters of load indicators to the previous group of participants. It should be noted that these specialists are actively involved in the processes of the neuromuscular system re-adaptation of people with hypokinesia. The parameters of work duration, projectile working mass, and their interrelation with the development of power endurance in an organism indicated by them can really positively influence the increase of functional reserves of students with

hypokinesia. However, the specified ratio of volume and intensity parameters with other indicators of workload, especially in conditions of aerobic glycolysis, affect completely different physiological processes.

In conditions of low intensity and average volume during a muscular contraction slowly contracting muscular motor units are accepted against the background of aerobic energy supply [3, 7]. However, if the projectile working mass is 75% of 1 RM and muscle tension lasts up to 1 min, then the activity of fast contractile muscle motor units of type A and even B takes place. Under these conditions, energy supply occurs due to anaerobic glycolysis [2, 3].

A comparative analysis of the survey results of power fitness specialists and the data presented in modern scientific works on sports physiology, biochemistry, and adaptation processes [5] allows us to draw certain conclusions. Indeed, under conditions of high intensity and low volume loads, the optimal parameters of the projectile working mass will be 80-85% of 1 RM. The muscle contraction duration in a set until complete fatigue of the working muscle groups will be no more than 40 s, under these conditions. The main type of energy supply of muscular activity in this load mode is an anaerobic-glycolytic. Using this variation of load component combination will be directed at the development of the maximum force at the increase of intramuscular coordination and hypertrophy of mainly fast contractile muscle fibers. Using machine exercises during training will allow for maximum isolation of individual muscle groups and reduce the number of active synergistic and stabilizing muscles. These changes will have a positive impact on the process of saving the energy supply system of muscle activity, which is so important for people with hypokinesia.

Conclusion. The research results showed that representatives of power fitness indicated the optimal variant of parameters of the main components of a physical activity regime which will promote the neuromuscular system re-adaptation of students with hypokinesia in the shortest time.

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PEDAGOGICAL VALEOLOGY AS A BASIS FOR IMPROVING STUDENTS' HEALTH

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Annotation The general meaning of the valeological direction is to optimize the process of physical education with the aim of improving the health of college students. Activities with a valeological content should include the following directions: development of literacy to strengthen and maintain one's health; way of maintaining health in the educational process; use of effective means of rehabilitation in the process of separate training of female students in the I-II courses.

Keywords: physical training programs, development of literacy to strengthen and maintain health, study of physical development and motility, parameters of physical development, values of physical education.

Today's young people are not only physically and mentally healthy, but also comprehensively and harmoniously developed, have the most up-to-date