



Physical training of highly qualified paracanoists in a year macrocycle

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Abstract

Objective of the study was to scientifically substantiate the content of the physical training of highly qualified paracanoists in a one-year macrocycle and evaluate the effectiveness of its use in the training process.

Methods and structure of the study. The experiment involved 9 highly skilled paracano athletes classified as LTA-IVF according to the ICF classification. The content of the physical training of athletes of this category is structured with the allocation of three stages that differ from each other in tasks, organization, goals, content of methodological techniques and a set of actions, means that determine the mechanisms for their use to achieve the highest possible sports results of highly qualified paracanoists.

Results and conclusions. It was determined that the content of physical training with the allocation of three successively implemented stages of highly qualified paracanoists in the annual macrocycle contributed to the increase in the level of physical fitness of athletes in this category, as well as to improve their competitive results.

Keywords: *physical training, highly qualified paracanoists, competitive activity, competitive result.*

Introduction. The physical training of highly qualified rowers with lesions of the musculoskeletal system is constantly present in practice, as in paracanoe, regardless of whether the training process is aimed at improving technical techniques, performing tactical actions or at forming mental qualities through various techniques at any intensity can not be on its own without doing exercise. When preparing highly qualified paracanoe rowers, there is a significant predominance of special physical training over general, and an insufficient reserve of the level of general physical fitness does not provide an opportunity to improve sports results [3]. Thus, athletes with amputation of the lower extremities have lesions of the central nervous system, which is accompanied by sensory, motor and vegetative dysfunction, while at the same time, aerobic productivity and overall performance are reduced [1, 4]. These features served as the basis for the research work on the study of the content of the physical training of highly qualified paracanoists.

Objective of the study was to scientifically substantiate the content of the physical training of highly qualified paracanoists in a one-year macrocycle and evaluate the effectiveness of its use in the training process.

Methods and structure of the study. The pedagogical experiment was carried out on the basis of the public regional organization "Regional Sports Federation of Kayaking and Canoeing of the Leningrad Region". The experiment involved 9 highly qualified paracanoe athletes classified as LTA-IVF (ICF classification), who are members of the Russian national paracanoe team and members of the Leningrad Region national team.

To assess the effectiveness of the content of physical training of highly qualified paracanoists in the annual macrocycle, pedagogical testing of physical fitness, the functional state of athletes was carried out, the dynamics of the competitive activity of paracanoe rowers was assessed over the period of the pedagogical experiment.



Results of the study and their discussion. The content of the physical training of highly qualified paracanoeists with amputations of the lower extremities in the annual cycle implies a phased construction.

At the first stage (general preparatory), the main direction of training is the predominant increase in compensatory capabilities for performing specific work in parkanoe and the increase in the state of the main functional systems that ensure successful specialization in the aftermath. This stage includes retracting and basic mesocycles. A variety of means and methods of sports training are used for the comprehensive development of the physical abilities of paracanoe rowers: a set of corrective exercises, swimming, cross-travels, adapted sports games, strength-oriented exercises. Means of general physical training occupy 75-85%, special preparatory exercises - 10-15%, competitive exercises - 5-10% of the total training load.

At the second stage (special preparatory) training is aimed at accumulating the maximum physical potential. A functional base is formed for the successful use of the achieved physical potential in competitions, the level of special physical abilities increases with an emphasis on muscle groups that perform compensatory functions when performing specific work in paracanoe. included basic, control-preparatory and precompetitive mesocycles. The main means of training at this stage is rowing in a boat, general preparations aimed at increasing the compensatory capabilities of the musculoskeletal system occupy 50-55% of the total volume of work performed, special preparatory exercises on land - 25-30%, competitive exer-

cises for the development of leading physical abilities - 20-25%.

At the third stage (precompetitive) training is aimed at transforming the accumulated physical potential into a high sports result. The achieved level of special preparedness increases, the ability to overcome the distance in competitions with maximum speed is formed. The stage includes control-preparatory and precompetitive mesocycles. The training load is distributed strictly taking into account the timing of the competition, and methods are used that are distinguished by a strict regimen of loads and rest (interval, repeated, competitive). Means of general physical training occupy 25-30%, special preparatory exercises - 40-45%, competitive exercises - 30-35% of the total training load.

At the same time, the organizational and pedagogical conditions that contribute to the successful implementation of the content of the physical training of highly qualified paracanoeists in the annual macrocycle include the requirements for planning the process and organizing classes, and methodological recommendations for conducting classes. Analysis of the test indicators of highly qualified paracanoe athletes obtained during the formative experiment (Table 1) allowed us to identify significant ($p < 0.05$) intergroup differences in tests that assess the level of speed-strength, coordination, strength and speed abilities; speed and strength endurance; general endurance, flexibility.

The results of the study presented in table. 2, indicate that the content of physical training of highly qualified paracanoeists in the annual macrocycle, implemented with the allocation of three stages, had a posi-

Table 1. Physical readiness of highly qualified paracanoeists ($n = 9$) during the formative experiment ($M \pm \delta$)

Test	Background values of indicators	Indicator values at the end of the preparatory period	Values of indicators in the competitive period (the period of the main competitions)
Imitation of rowing on a rowing machine, number of strokes in 20 s	21,33±1,89	25,78±1,55*	30,33±2,36**, ***
4 paracanoe turns, s	93,81±1,66	91,14±1,41*	88,43±1,29**, ***
30 strokes, s	24,46±0,65	23,08±0,58*	21,87±0,61**, ***
Push-ups on the uneven bars, the number of times	42,22±1,99	46,56±1,95*	49,00±2,05**, ***
Barbell row lying 50% of max., number of times	86,11±3,41	93,78±3,12*	99,89±3,14**, ***
Front crawl 200 m	195,47±1,07	193,10±1,06*	190,39±1,08**, ***
Rowing 50 m, s	14,84±0,16	14,59±0,14*	14,29±0,13**, ***
"Twist", centimeters	73,92±3,94	66,07±3,79*	58,59±3,67**, ***

* – Statistically significant differences between the background values of indicators and indicators at the end of the preparatory period ($p < 0,05$); ** – Statistically significant differences between the values of indicators at the end of the preparatory period and indicators during the main competitions ($p < 0,05$). *** – Statistically significant differences between the background values of indicators and indicators during the main competitions ($p < 0,05$).



Table 2. Dynamics of the results of competitive activity of paracanoists during the pedagogical experiment ($M \pm \delta$)

No. athlete	Before the experiment (points by rating)	After the experiment (points by rating)
1	74,00	112,00
2	84,00	104,00
3	84,00	112,00
4	74,00	90,00
5	102,00	104,00
6	77,00	77,00
7	66,00	79,00
8	89,00	92,00
9	86,00	84,00
$M \pm \delta$	81,78 \pm 9,90	94,89 \pm 12,80 *

* – Statistically significant differences between the indicators of competitive activity of paracanoists ($p < 0,05$);

tive impact on the dynamics of the competitive activity of athletes with lower limb amputations ($p < 0,05$) [4].

Conclusions. The physical training of highly qualified paracanoists in the annual macrocycle, built with the allocation of three successively implemented stages, the differences of which are determined by the target settings, tasks to be solved, the content of corrective and general preparatory physical exercises, the use of methodological actions and techniques, the volume and intensity of the load, provided an increase in the physical fitness of paracanoists and had positive impact on the dynamics of their competitive activity.

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