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## THE METHODOLOGY OF GENERAL PHYSICAL TRAINING IN AN ANNUAL TRAINING CYCLE OF QUALIFIED FEMALE ATHLETES SPECIALIZING IN KAYAKING

The conceptual statements of qualified athletes training do not sufficiently take into account the specifics of general physical training influences of a particular type, which, on the one hand, is a significant obstacle to the effective construction of the training process in rowing, and on the other hand, serves as the basis for an in-depth and systematic study of this problem. The article presents the developed methodology of general physical training of highly qualified female athletes specializing in kayaking. It was shown that this technique contributed to a favorable functional and psychological background during the adaptation of female athletes to training influences, increased the effectiveness of the training process and the effectiveness of competitive activity without increasing the volume and intensity of the applied training loads, made the training process more manageable. This was also evidenced by the analysis of the level of physical fitness at the end of the experiment and successful performance in competitions throughout the competitive period.

**Key words:** kayaking, highly qualified female athletes, general physical training, strength abilities, annual cycle

**Медведев П.Ю., Седалев С.В., Врублевський Є.П. Методика загальнофізичної підготовки кваліфікованих спортсменок, що спеціалізуються в веслуванні, в річному циклі тренування.** Концептуальні положення підготовки кваліфікованих спортсменів недостатньо враховують специфіку загальнофізичних тренувальних впливів конкретного виду, що є, з одного боку, значною перешкодою на шляху ефективної побудови тренувального процесу в веслуванні, а з іншого – служить підставою для поглибленого і системного вивчення даної проблеми. У роботі представлена розроблена методика загальнофізичної підготовки висококваліфікованих спортсменок, що спеціалізуються в веслуванні на байдарках. Показано, що дана методика сприяє сприятливому функціональному і психологічному фону при адаптації спортсменок до тренувальних впливів, підвищила ефективність тренувального процесу і результативність змагальної діяльності без збільшення обсягу та інтенсивності застосовуваних навантажень, зробила тренувальний процес більш керованим. Про це також свідчить аналіз рівня фізичної підготовленості після закінчення експерименту та успішний виступ у змаганнях протягом змагального періоду.

**Ключові слова:** веслування на байдарках, висококваліфіковані спортсменки, загальнофізична підготовка, силові здібності, річний цикл.

**Медведев П.Ю., Седалев С.В., Врублевский Е.П. Методика общефизической подготовки квалифицированных спортсменок, специализирующихся в гребле в годичном цикле тренировок.** Концептуальные положения подготовки квалифицированных спортсменов недостаточно учитывают специфику общефизических тренирующих воздействий конкретного вида, что является, с одной стороны, значительным препятствием на пути эффективного построения тренировочного процесса в гребле, а с другой – служит основанием для углубленного и системного изучения данной проблемы. В работе представлена разработанная методика общефизической подготовки высококвалифицированных спортсменок, специализирующихся в гребле на байдарках. Показано, что данная методика способствует благоприятному функциональному и психологическому фону при адаптации спортсменок к тренирующим воздействиям, повысила эффективность тренировочного процесса и результативность соревновательной деятельности без увеличения объема и интенсивности применяемых нагрузок, сделала тренировочный процесс более управляемым. Об этом также свидетельствует анализ уровня физической подготовленности по окончании эксперимента и успешное выступление в соревнованиях на протяжении соревновательного периода.

**Ключевые слова:** гребля на байдарках, высококвалифицированные спортсменки, общефизическая подготовка, силовые способности, годичный цикл

**Introduction.** Rowing is a sport that provides general physical development of the body. This is due to the participation of all muscle groups in the execution of the stroke, the mass amplitude of movements, rather high efforts on the stroke, the duration of the sports exercise and its emotionality [2, p. 111; 12, p. 10]. However, just the specialized means of training, especially at the initial stages, are not enough for the harmonious development of an athlete and creating a base for the growth of his sportsmanship. To

overcome the resistance of wind and water, athletes need to have a high level of physical qualities [1, p. 29; 4, p. 114; 12, p. 7].

The increase in sportsmanship of athletes specializing in rowing is determined by a rationally built structure of training activity, an optimal ratio of means of general physical and special training, an effective distribution and combination of loads of various physiological orientation in the annual cycle [2, p. 112; 6, p. 29; 7, p. 40; 10, p. 70]. Such a structure should ensure a steady increase in the training impact of exercises, taking into account the level of preparedness of an athlete, the period and objectives of training. Naturally, this can be done only by clearly understanding the effectiveness of the tools used and the optimal conditions for their simultaneous and consistent combination in one training session in a weekly, annual and long-term training cycles [3, p. 54; 12, p. 16].

Recently, various approaches to the training of highly qualified rowers have been developed, but this problem has not yet received a final solution. The views of various specialists are quite contradictory. At the same time, there are detailed developed methods for the development of strength abilities in other types of sport [3, p. 118; 8, p. 56]. But the latter are of a general nature, where no data is given regarding the differences of the female and male body [3, p. 24; 4, p. 60; 9, p. 84; 13, p. 108].

**The purpose of the research:** to develop and experimentally test the methodology of general physical training of highly qualified female athletes specializing in kayaking.

**Organization and methods.** The research took place over a preparatory period of twenty-three weeks. The experiment was attended by female (n = 12) members of the national team of the Republic of Belarus, specializing in kayaking. In accordance with the developed methodology, the increase in strength capabilities was carried out using exercises with a barbell: "bench press" (30 kg), "barbell thrust" (40 kg), "squat with a barbell" (45 kg), "barbell push" (30 kg). Statistical processing of the obtained material was carried out using generally accepted methods [11, p. 23].

**Research results and their discussion.** The dynamics of the volume of power load in microcycles during the preparatory period was not homogenous (Fig. 1). During the first five weeks, strength training was carried out only with body weight in the form of push-ups and pull-ups. Resistance exercises were used starting from the sixth week.

The volume of power load during the general preparatory stage (the first twelve weeks) ranged from 2 to 7 tons in a weekly microcycle. At the special preparatory stage, strength training had a two-peak structure. In the first half of the special preparatory stage, the volume of power loads corresponded to the volume used at the general preparatory stage. In the second half - there was an increase in the volume of work with the barbell up to 18 tons in a weekly microcycle. The greatest emphasis was on the barbell squat and the bench press.

Jumping exercises, bodyweight exercises and swing exercises were classified as general physical fitness means.

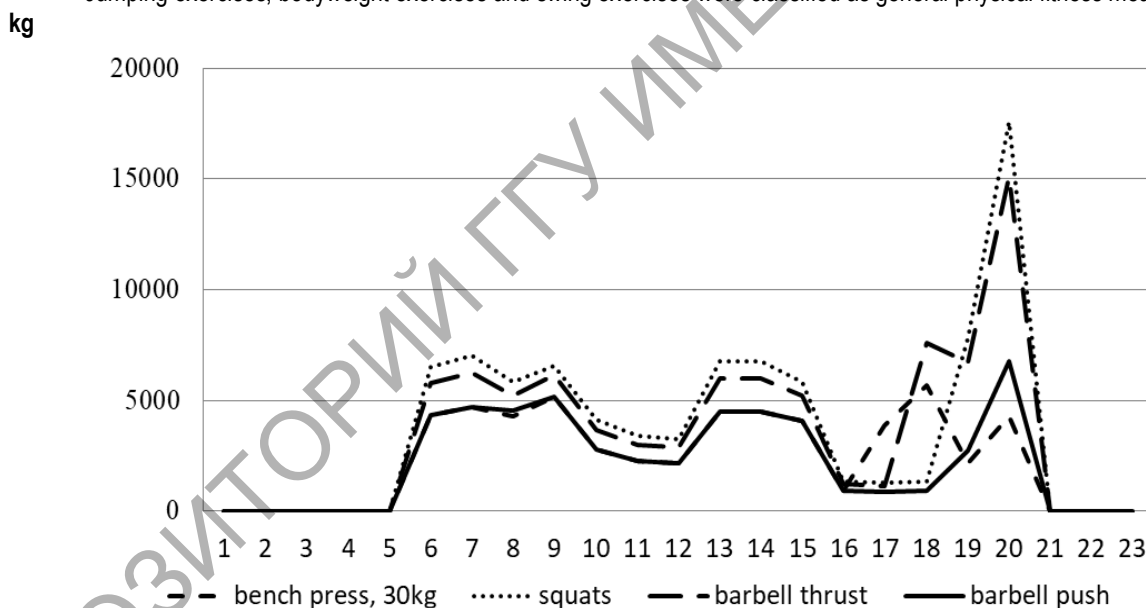


Figure 1. Dynamics of strength training at the preparatory stage of female athletes specializing in kayaking  
 The dynamics of the use of exercises in microcycles of the preparatory period is shown in Figure 2.

Number of times

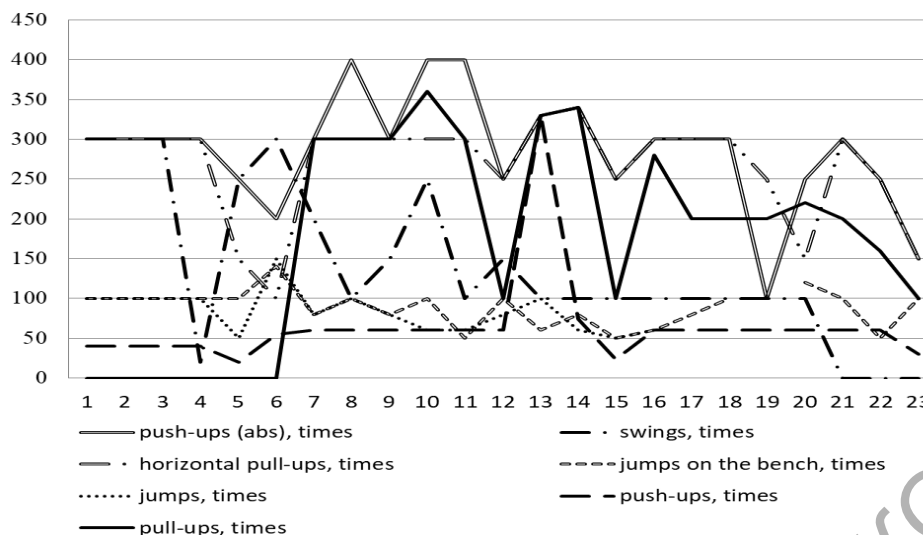


Figure 2. Dynamics of the means of general physical preparedness in weekly microcycles of the preparatory period of the annual cycle of training female athletes specializing in rowing kayaking

In the level of power indices, determined by exercises performed with external weights (barbell thrust, bench press, squat with a barbell, barbell push) had statistically significant differences in the increase in the indicator ( $p < 0.05$ ). In the exercise "Barbell thrust", the increase in the indicator averaged 7.4%.

In the exercise "Squat with a barbell" - 9.9%. In the exercise "Barbell push" - 3.5%. In the exercise "Bench press" - 10.2%. At the same time, the test that determines strength endurance (pull-up with own weight) did not show significant differences ( $t = 0.44$ ,  $p > 0.05$ ).

Indicators of strength, in this case, showed an increase in strength qualities associated with weights that have external resistance. In the parameter of strength endurance of the arm muscles - the barbell pulling 40 kg for seven minutes, no significant differences were found ( $t = 1.05$ ,  $p > 0.05$ ).

At the same time, in the test for determining the strength endurance of the leg muscles - squatting for seven minutes, significant differences in the increase in the result after the preparatory stage were revealed ( $t = 2.30$ ,  $p < 0.05$ ). The increase in this indicator during the experiment was 6.9%. The analysis of the level of general physical fitness, carried out before the beginning of the preparatory stage and after its completion, made it possible to reveal changes in the physical fitness of female athletes (Table 1).

The change in the indicator of speed-strength abilities - long jumps from two legs (10 seconds) were not significantly significant ( $t = 0.56$ ,  $p > 0.05$ ). At the same time, this training tool allows improving the speed-strength conditions of athletes. The use of this exercise, as the main one in the development of speed-strength abilities, is determined by the training program in kayaking.

Table 1

Change in the level of general physical fitness of female athletes specializing in kayaking before and after the end of the experiment ( $n = 12$ )

Physical exercises	Before the start of the stage $x \pm \delta$	At the end of the stage $x \pm \delta$	t-criteria	p
Barbell thrust, kg	67,5 ± 1,7	72,5 ± 1,9	2,08	< 0,05
Barbell thrust (40 kg за 7 min), number of times	186,2 ± 3,4	190,9 ± 2,9	1,05	> 0,05
Squats with a barbell, kg	85,1 ± 2,4	93,6 ± 2,5	2,45	< 0,05
Barbell press, kg	170,0 ± 1,7	175,3 ± 1,4	2,41	< 0,05
Pull-ups, number of times	6,4 ± 0,7	6,9 ± 0,9	0,44	> 0,05
Barbell push, kg	50,1 ± 1,6	55,2 ± 1,8	2,12	< 0,05
Long jumps from two legs (10 s), m	213,7 ± 7,1	220,3 ± 9,4	0,56	> 0,05
Squats for 7 min, number of times	162,2 ± 3,9	173,4 ± 2,9	2,30	< 0,05

**Conclusions.** The lack of clear recommendations for the development of physical qualities and insufficient substantiation of the criteria leads to the use of a large volume of training influences. At the same time, the developed and experimentally tested methodology of general physical training of highly qualified female athletes specializing in kayaking has shown its productivity. This is evidenced by the analysis of the level of physical fitness at the end of the experiment and successful performance in competitions during the competitive period.

It is also important that the development of the strength abilities of the athletes took place taking into account the biorhythmics of a particular athlete. The latter contributed to a favorable functional and psychological background during the adaptation of the body of athletes to the current training loads.

Prospects for using the research results are in the development of a methodology for training female athletes specializing in kayaking, based on the biorhythmics of their body in various structural units of the annual training cycle and the specificity of training influences.

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