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A method of special physical training of short-distance runners in athletics

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Abstract
Purpose: This article presents a comparative analysis of the results of special physical training of athletes in the types of short-distance running to determine the level of development of special physical training with the help of pedagogical tests and their results obtained at the beginning and end of the study, and on the basis of the results obtained, scientific research.
Methods: We drew attention to the fact that short-distance runners determine the degree of formation of their special physical training with the help of the following pedagogical tests. When determining the speed and strength qualities of short-distance runners, we focused on determining the speed and strength endurance based on running from foot to foot at a distance of 60 m, running at a distance of 200, 300 and 500 m. Attention was paid to the definition of fast endurance when running at a distance of 1000 m.
Results: We In short-distance runners, the determination of speed-strength qualities and speed-strength endurance (running at distances of 60, 200, 300 and 500 m) is accompanied by an improvement in movement speed using the properties of muscle elasticity, which leads to an increase in mobility in the joints. This, in turn, will allow the antagonist muscles to move easier and faster, although the resistance of the muscles to the fact that the amplitude of movement is greater is reduced. It is very important to take these situations into account when planning training sessions, which has once again been confirmed.
Conclusion: Based A comparative analysis of the results of our study showed that there were practically no significant differences compared to the data provided by local scientists during the study. But the results of the analysis showed that we are significantly behind the indicators of the model given by foreign scientists on special physical training.

Keywords: Technical and tactical training, speed and strength endurance, difference in results, a ball with a filling, special physical training, model indicators.

Introduction

The possibilities of achieving high athletic results in short-distance running are primarily associated with general and special dexterity-strength, endurance and, of course, running technique and tactics. But if these qualities, as well as the means of forming running techniques and tactics, are not planned in accordance with the stages of the annual preparatory period, and the training load does not increase according to the "wave-like" principle, it is inevitable that it will not be possible to achieve a high result by the same cycle of competitions. Therefore, it is important to plan physical, functional, technical and tactical training loads based on real tasks and requirements laid down in the preparatory periods and preparation stages that are specific to this training. The correct organization of this process, the effective preparation of athletes for the competitive cycle are largely determined by the dynamics of the development of special physical qualities. Athletes must develop independent physical fitness for several years in relentless training in the process of sports training. It is especially advisable to develop physical training based on the development of new strategic plans for the annual training of athletes as part of the targeted training of athletes with disabilities in short-distance running (Beglecov, 2016; Bondarenko, 1994).

The type of short-distance running requires physical qualities from the athlete, such as agility, strength endurance. It expresses the degree of development of physical qualities in oneself, the results obtained from short-distance runners.

Many scientists have conducted scientific research to study the problem, its positive solution. Among them, AN Begletsov, VN Nikitushkin, NG Ozolin, VI Konikov, OM Mirzoev, V Borzov, NT Tukhtabaev, KT Shakirzhanov conducted a number of scientific studies on the planning of the educational process, organization and conduct of modeling classes. However, not enough scientific research has been conducted on the development of special physical training of student-athletes running short distances. This study, conducted by us, focuses on highlighting the results of a study on the physical fitness of student-athletes. Since short-distance runners do not have a special level of physical fitness, they cannot achieve a high athletic result in sports. And this does not allow to achieve a high athletic result in sports competitions. Therefore, it is necessary to properly plan

the optimal level of training loads and improve physical fitness based on the separation of proportions (Mirzoev, 2005; Nikitushkin, 2010; Ozolin, 2002).

As we know, if we do not develop special physical training not only in short-distance running, but also in other sports, it is inevitable that our athletic results will not grow. To do this, it is necessary, first of all, to focus on the selection of talented, promising athletes, their orientation to long-term preparatory stages and the development of a broad long-term plan for targeted training.

Methods

It was studied on the basis of programs for the development of physical fitness of short-distance runners and the analysis of scientific and methodological literature. The following methods were used to determine the physical fitness of student-athletes-runners for short distances.

For our part, with the help of special tests to determine the special physical fitness of short-distance runners, pedagogical experience was conducted in the 2020-2021 academic year at the Uzbek State University of Physical Culture and Sports in athletics for runners of 1-3 courses for short distances. During our research, we focused on determining the quality of fast power based on foot-to-foot running at a distance of 60 m and running strength based on running at a distance of 200, 300 and 500 m. Attention was drawn to the determination of the rapid explosive power of the legs in short-distance runners through a long jump from a standing position, triple and five-time jump from a standing position. When determining the explosive force of the hand, balls weighing 3 kilograms were thrown forward with both hands. Determining the frequency of steps in 20 seconds and 1 minute from a standing position, we determined special physical training while sitting with a barbell of 45, 50, 55, 60 kg paying attention to the weight category (Konikov, et al., 2013; Soliev, 2020).

Results and discussion

With the development of special endurance of runners for short distances, it is primarily determined by physiological processes that depend on the impact of loads that are given to the whole body, the intensity of running and the duration of running. In this case, it is important to take into account the need and the ratio of oxygen to its consumption. It is known that the efficiency of the working capacity of the body and the central nervous system depends on the supply of oxygen. In the absence of oxygen, performance decreases, especially in a long process. Therefore, the importance of the level of respiration and the development of the cardiovascular system, which provides the body with oxygen, is very important. Taking into account the above, it is necessary to properly load training athletes by running 100 and 200 meters. There are many specific aspects of developing the special endurance of short-distance runners. The intensity of running at these distances refers to the maximum range of physical exercises. In order to run such distances at maximum speed, a runner must have maximum physical fitness. In this case, the athlete's desire to consume oxygen is not so great (about 6-13% of the total oxygen demand). This is due to the fact that during running at 100 and 200 m, the level of oxygen supply to the muscles that carry out their activities in the respiratory and cardiovascular systems decreases sufficiently, which is the reason for this. The oxygen debt increases significantly, and the metabolic processes in the muscles are accelerated. As a result, the body lacks oxygen and a state of fatigue occurs, which is characterized by a decrease in running speed, discoloration of the athlete, redness. The speed of movement of an athlete is primarily due to nervous activity associated with the central nervous system, which regulates and regulates the movement of muscles, stretching and relaxing them. This activity largely depends on how much the athlete's sports technique has been improved, on muscle strength, elasticity, joint mobility and on his endurance during long-term work.

A comparative analysis of the results showed that the difference in height between the results showed that the group of Soliev showed a result of 7.79±0.55, while our short-distance runners on average showed a result of 7.75±0.14 in our test, which was a fast force at a distance of 60 m from the bottom start. When we conducted the analysis, it was noticed that the examiners who participated in our study ran this distance well by 0.38%. In our next 100 m running test, the testers of the I Soliev group recorded an average of 11.9±0.92 results, while our testers recorded an average of 11.8±0.79 results at this distance. The intermediate differ-

ence in results showed that the results of our examiners are 0.84% good. While Soliev's group recorded a result of 17.4±1.12 seconds when running at a distance of 150 m, representing speed and strength endurance, our examiners recorded a result of 17.3±1.12 at this distance. With a difference in the growth of results of 0.57%, our examiners recorded a good result. At the 300 m running distance, representing fast endurance, the testers of the Soliyev group showed an average of 41.1±3.94 results. Our examiners showed a result of 41.0±6.56 at this distance. It was noted that the difference in height between them was higher for our examiners by an average of 0.24%. While running at a distance of 500 m, Soliyev's group showed a result of 67.8±6.59, our examiners recorded a result at this distance of 67.5±8.39 seconds. And the results of the analysis showed us that the results of our athletes were 0.44% higher. In the test for running at a distance of 1000 m, which represents fast endurance, the group of Soliev showed a result of 179.5±9.45, while our examiners recorded a result of 175.5±11.7 at this distance.

The intermediate difference in results showed that our examiners were 2.23% higher. In our testing to determine the explosive strength of the leg, jumping from place to place in length, the group of Soliev recorded a result of 257.0±15.9 cm. In our athletes, the result for this indicator averaged 251.0±24.6 cm. The intermediate difference between them, however, showed that 2.33% of our examiners were left behind. In the triple jump from the place, the examiners of Soliev's group recorded a result of 807.3±32.6. And our examiners jumped by 7.97±26.3 centimeters. And the difference between them is that the results that the examiners showed us are 0.87% behind. In the five-time jump from the place, Soliev's group showed a result of 1189.5±45.9 cm, while our examiners showed a jump of 1179.1±51.8 cm. The intermediate difference shows that it is 0.87% behind. Soliev's group showed a result of 3 ±887.7 cm in our test for determining the explosive strength of the arm by throwing a 3-kilogram filled ball forward with two hands. In our study, this indicator for our examiners was 841.3±51.2 centimeters. The intermediate difference showed that we are 5.23% behind. In our next test for jumping from foot to foot, the results of Soliev's experiment with examiners were 26.1±3.65 times. However, our examiners recorded this indicator 26.0±3.26 times. And the result of the analysis showed that our athletes from the Soliev group are 0.38% behind the results. Determining the frequency of steps by hitting the ground with your foot for 20 seconds from a place in our test showed 80.1±15.6 times the result of the examiners of the Soliev group, our examiners recorded 79.2± 26.3 times in our test to determine the frequency of these steps. In a test to determine the frequency of steps within one minute, Soliev's group recorded a result of 178.9 ± 24.5 times. The step frequency of our examiners was 177.4±34.5 times higher. They showed that the intermediate difference between them in our athletes was less than 0.85%. There were no significant differences when we compared the results of a study conducted on the special physical training of examiners of both groups.

However, the results of the analysis show that we are significantly lagging behind the requirements of VG Nikitushkin, VP Guba and VB Zelichenka for the performance of short distance runners in terms of the model of spe-

Table 1. Dynamics of the degree of formation of special physical training of short-distance runners.

Indicators	*I Soliyev n=108*	*M Olimov n=114*	*Difference %*
60 meters sprint (s)	7.79±0.55	7.75±0.14	0.04
100 meters sprint (s)	11.9±0.92	11.8±0.79	0.84
150 meters sprint (s)	17.4±1.12	17.3±1.12	0.62
200 meters sprint (s)	24.05±1.98	24.01±1.83	0.15
Running for 300 meters (s)	41.1±3.94	41±6.56	0.15
Running for 500 meters (s)	67.8±6.59	67.5±8.39	0.29
Running for 1000 meters (s)	179.5±9.45	175.5±11.7	2.71
Running while jumping from foot to foot at a distance of 60 m (times)	26.1±3.65	26±3.26	0.21
Jumping from a place to length (cm)	257±15.9	251±24.6	2.09
Triple jump from a place (cm)	807.3±32.6	797±26.31	2.51
Five-time jump from a standing position (cm)	1189.5±45.9	1179.1±51.8	1.53
Throwing a 3-kilogram filled ball forward with two hands (cm)	887.7±37.9	841.3±51.2	7.43
The frequency of steps in 20 seconds in standing position (times)	80.1±15.6	79.2±26.3	0.30
The frequency of steps in a minute in standing position (times)	178.92±24.5	177.4±34.5	0.37
Squat with a barbell	16.1±3.9	16.1±4.51	0.00

cial physical training. The results are shown in table 1 based on a comparative analysis.

The results obtained above give athletes the opportunity to correctly perform subsequent training loads, in addition, indicate the degree of formation of special physical training. Because it shows that the results obtained lag behind when comparing short-distance runners with model indicators.

Based on the above results, annual and multi-year preparatory training processes are dictated by the careful development of training programs and plans based on the individual characteristics of athletes. It remains to say that a properly planned training program in order for them to become highly qualified athletes in the future will serve as a solid foundation.

- Based on the results of the study, the fact that the training plan with athletes running short distances is outdated today, errors in the application of motor methods lead to the fact that they freeze in one place without increasing the result in sports. In addition, when developing a new structure for planning the annual training process for short-distance runners, motor methods in micro- and mesocycles should be developed in the athletes' training system in accordance with the set goal.

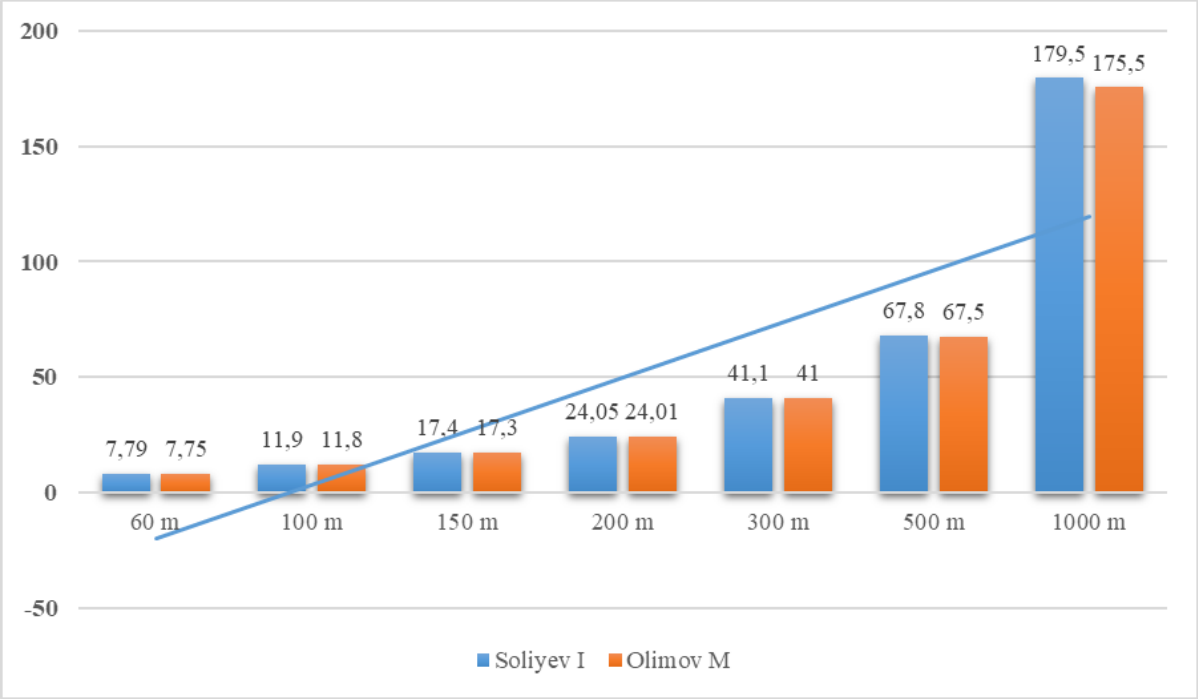


Figure 1. During the study, the comparative dynamics of the results of running on 60, 100, 150, 200, 300, 500, 1000 meters .

Conclusion

The results of the study allowed us to note the following conclusions.

- According to the results of the analysis of scientific and methodological literature, although there is literature on the physical training of athletes running short distances, but the data are outdated and the scientific literature is formed on the basis of studies conducted by most foreign scientists, this was determined during the study.

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