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RESULTS OF CHANGES IN PHYSICAL FITNESS INDICATORS OF SHORT-DISTANCE RUNNERS IN THE STUDY TRAINING GROUP. (IN THE CASE OF GIRLS)

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Abstract

This article examines the experiences of leading scientists regarding the physical fitness of short-distance runners within a training group. Model indicators for the physical fitness of short-distance athletes in this training group are provided. The results obtained at the beginning and end of the study on the physical fitness indicators of short-distance runners are summarized. Practical recommendations for improving the technical preparation of short-distance runners have also been developed.

Keywords: Technical preparation, starting acceleration, practical experience, maximum indicator, coefficient of variability, sprinter, result, planning, proportional movement.

Relevance of the Topic. Alongside the development of various sports in our country, athletics has also progressed significantly, with substantial conditions created for its advancement. Short-distance running, part of the Olympic Games program, has become one of the increasingly popular sports in our country. Today, the adoption of numerous regulatory and legal documents related to sports, alongside the development of various disciplines, provides opportunities to elevate athletics to a new level. Therefore, it is essential to organize training sessions scientifically, with an optimal planning of load ratios to manage training effectively. Thus, scientifically organizing these training sessions has become one of the critical tasks in the field today.

Results and Discussion. The pedagogical restorative exercises used in training and competition activities for the short-distance running training group positively

impacted sports performance. During the study, the physical fitness indicators of the athletes in the experimental group improved significantly. Reliable improvements were observed in the experimental group compared to the control group athletes. In this study, the restorative methods developed by us were applied to the experimental group, allowing us to assess the status of physical fitness levels.

Dynamics of the Formation of Physical Fitness Indicators for Short-Distance Runners in the Experimental Group at the Beginning and End of the Study (n=15)

№	Test	Study groups	$\bar{x} \pm \sigma$	V. %	Absolute Difference	Relative Difference (%)	t	p
1	30m run from starting position (s)	Pr.St.	4,84±0,17	3,51	0,29	5,9	9,7	<0,001
		P.St.	4,55±0,19	4,17				
2	30m run from crouch start (s)	Pr.St.	5,03±0,19	3,7	0,15	2,9	0,03	>0,05
		P.St.	4,88±0,18	3,6				
3	60m run from crouch start (s)	Pr.St.	9,19±0,39	4,2	0,49	5,3	0,02	>0,05
		P.St.	8,70±0,20	2,2				
4	100 m run (s)	Pr.St.	14,09±0,44	3,1	0,26	1,8	7,84	<0,001
		P.St.	13,83±0,65	4,6				
5	150 m run (s)	Pr.St.	22,8±0,91	3,9	1,6	6,8	0,09	>0,05
		P.St.	21,24±1,32	6,2				
6	200 m run (s)	Pr.St.	30,09±0,72	2,3	0,9	2,9	0,01	>0,05
		P.St.	29,2±1,28	37,3				
7	400 m run(s)	Pr.St.	74,6±2,27	4,3	5,9	7,9	8,7	<0,001
		P.St.	68,7±3,59	5,22				
8	Standing long jump (cm)	Pr.St.	190,7±10,1	5,2	22,5	10,5	9,8	<0,001
		P.St.	213,2±12,63	5,9				
9	Standing triple jump (cm)	Pr.St.	475,9±16,43	3,4	65,6	12,1	4,06	<0,001
		P.St.	541,5±35,09	6,6				
10	Standing quintuple jump (cm)	Pr.St.	842,1±21,59	2,5	118	12,2	1,28	<0,1
		P.St.	960,1±26,78	2,7				
11	3kg overhead throw (cm)	Pr.St.	529,4±44,42	8,3	99,9	15,8	9,87	<0,001
		P.St.	629,3±43,37	6,9				
12	100m hop on one leg (times)	Pr.St.	56,8±1,47	2,5	2,7	4,7	2,99	<0,001
		P.St.	54,1±0,99	1,8				
13	Step frequency for 20 sec in place (times)	Pr.St.	58,9±3,93	6,5	8,2	12,2	4,9	<0,001
		P.St.	67,1±3,47	5,1				
14	Step frequency for 1 min in place (times)	Pr.St.	161,1±3,31	0,19	4	2,4	0,03	>0,05
		P.St.	165,1±3,56	2,15				
15	Squats with 40kg (times)	Pr.St.	13,2±1,26	9,54	2,7	16,9	1,06	<0,1
		P.St.	15,9±0,80	0,05				

* **Legend:**

- **Pr.St.** = Pre-study
- **P.St.** = Post-study
- **± σ** = Standard Deviation
- **V%** = Coefficient of Variation
- **Absolute Difference** = Absolute Change in Value
- **Relative Difference (%)** = Percentage Change
- **t** = t-value (statistical significance)
- **p** = p-value (significance level)

Post-Study Results for Physical Fitness Levels of Short-Distance Runners in the Experimental Group. After the study, the experimental group in the short-distance running training program demonstrated notable improvements across various physical fitness tests:

- 30m sprint from the starting position: The average pre-study result was 3.84±0.17 seconds, which improved to 4.55±0.19 seconds post-study.
- 30m sprint from a crouch start: The initial average was 5.03±0.19 seconds, improving to 4.88±0.18 seconds after the study.
- 60m sprint from a crouch start: Pre-study results averaged 9.19±0.39 seconds, while post-study results improved to 8.70±0.20 seconds.
- 100m standard run: Athletes initially recorded 14.09±0.44 seconds on average, which later improved to 13.83±0.65 seconds.

For peed-strength endurance measured over 150 meters, the average pre-study result was 22.8±0.91 seconds, which improved to 21.24±1.32 seconds.

In tests measuring speed, strength, and endurance:

- 200m run: Average time decreased from 30.09±0.72 seconds pre-study to 29.2±1.28 seconds post-study.
- 400m run: Initial times averaged 74.6±2.27 seconds, improving significantly to 68.7±3.59 seconds post-study.

In explosive power assessments:

- Standing long jump: The pre-study average was 190.7±10.1 cm, increasing to 213.2±12.63 cm.

- Standing triple jump: Initial results averaged 475.9±16.43 cm, improving to 541.5±35.09 cm post-study.
- Standing quintuple jump: This test, which evaluates explosive strength development, showed an improvement from 842.1±21.59 cm to 960.1±26.78 cm.

For upper body strength:

- 3kg medicine ball overhead throw: The pre-study average was 529.4±44.42 cm, increasing to 629.3±43.37 cm post-study.

To evaluate stride length:

- 100m hopping on alternate legs: Athletes initially averaged 56.8±1.47 times, with a post-study average of 54.1±0.99 times.
- Step frequency over 20 seconds in place: Athletes initially recorded an average of 58.9±3.93 repetitions, increasing to 67.1±3.47 repetitions post-study.
- Step frequency over 1 minute in place: The average pre-study result was 161.1±3.31 repetitions, which improved to 165.1±3.56 repetitions post-study.

Finally, in a strength test:

- 40kg squat repetitions: The average pre-study result was 13.2±1.26 repetitions, which increased to 15.9±0.80 repetitions post-study.

Overall, the experimental group showed consistent improvements in speed, explosive power, endurance, and strength following the study, demonstrating the effectiveness of the training interventions used.

Conclusion

The results of the study on the physical fitness of short-distance runners in the training group support the following conclusions. Pedagogical observations and competition activities suggest the necessity of implementing new technologies in Uzbek athletics competitions to quickly assess sports performance and integrate these technologies into training to develop athletes' starting reaction skills. Several recommendations have been developed to enhance the physical preparedness of short-distance runners, which serve as a foundation for improving sports results.

- Rapid Performance Assessment:In short-distance running training sessions and prestigious competitions, coaches should focus on quickly assessing athletes'

performance. Monitoring both achievements and weaknesses, and addressing areas for improvement through individualized work, contributes to enhanced results.

- Improvement of Physical Preparedness: Taking into account any shortcomings observed in the training process, coaches can implement optimal training variants for physical preparedness before training and competition activities. This approach can significantly streamline the efforts of both coaches and athletes.

- Efficient Running Techniques and Training Optimization: Teaching athletes efficient running techniques during training and making the most effective use of training time are essential factors that can positively influence future athletic performance.