FEATURES OF THE DEVELOPMENT OF THE COORDINATION ABILITIES OF FITNESS ATHLETES AGED 8-9 YEARS

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Purpose: to determine the dynamics of the development of the coordination abilities of fitness athletes aged 8-9 years.

Material and methods: 24 fitness athletes were tested at the beginning and at the end of the study. The following research methods were used: theoretical analysis and generalization of data from special scientific and methodological literature; pedagogical observation; pedagogical testing; methods of mathematical statistics.

Results: the results of a pedagogical study of the development of the coordination abilities of fitness athletes aged 8-9 years indicate a significant increase in the indicators of coordination abilities, which confirm that the use of special complexes of exercises is an effective approach in the educational and training process.

Conclusions: comparison of the dynamics of statistical indicators of the final testing of fitness athletes aged 8-9 years showed an increase in all tested indicators.

Keywords: coordination abilities, athletes, fitness, testing.

Introduction

Like any sport, fitness attracts the young, and even the children's generation of our time, with its simplicity and varied palette of movements, which create a demonstration of different-sized and statically fixed body positions of those involved.

The development of the coordination abilities of 8-9 years old children occupies an important place in the system of technical training of athletes in complex coordination sports, which include fitness. Due to the coordination abilities of athletes of this age, much attention is paid to education and technical training. Its main content is the basic training of the sport, learning the profiling elements [1, 4, 7].

Currently, the development of the coordinating abilities of young athletes in children's fitness is becoming an increasingly urgent problem. In this fitness, in addition to static postures, body positions, characteristic movements are used, performed in dynamics, in revolutions, as well as in changing the angles of posing the athlete's body [5, 6, 13].

Taking this into account, our study on the peculiarities of the development of the coordination abilities of fitness athletes at the age of 8-9 years old is relevant.

Communication of research with scientific or practical tasks, plans, programs. The study was carried out in accordance with the initiative theme of the research work of the Department of Gymnastics, Dance Sports and Choreography of KSAPC: "Theoretical and methodological foundations for the development of the backbone components of physical culture (sport, fitness and recreation) for 2020-20251 (state registration number 0120U101215).

Purpose of the research: to determine the dynamics of the development of coordination abilities of athletes in fitness at the age of 8-9 years.

Objectives of the study:

1. To study the problems of the development of coordination abilities of athletes in fitness at the age of 8-9 years.

2. To determine the content and features of the formation of coordination abilities among fitness athletes at the age of 8-9 years.

Material and Methods of research

The study was conducted during 2020-2021. The study used the following research methods: theoretical analysis and generalization of data from special scientific and methodological literature; pedagogical observation; pedagogical testing; methods of mathematical statistics 17 fitness athletes from the control group (8 boys and 9 girls) and 17 fitness athletes from the main group (8 boys and 9 girls) were tested at the beginning and end of the study.

Results of the research

At the beginning of the study, the first testing of the coordination abilities of athletes in fitness at the age of 8-9 years of the control group (CG) and the main group (MG) was carried out, which made it possible to determine their initial level. The test results are presented in Table 1.

Table 1

The results of testing the coordination abilities of fitness athletes at the age of 8-9 years at the beginning of the pedagogical experiment

№ i/o	Test name	$\overline{X}$ ±m		t_p	t_{gr}	P
		CG	MG			
Boys ($n_1+n_2=16$)						
1.	Shuttle run (s)	12,82±0,21	12,6 ±0,18	0,79	2,14	>0,05
2.	Static balance (s)	9,94±0.32	9,9±0,46	0,07	2,14	>0,05
3.	Tossing and catching the ball (number of times)	14,4±0,34	14,8±0,41	0,75	2,14	>0,05
4.	Bouncing the ball off the wall (number of times)	11,4±0,64	10,2±0,41	1,59	2,14	>0,05
5.	Jumping rope (number of times)	11,0±0,91	11,8±0,82	0,65	2,14	>0,05
Girls ($n_1+n_2=18$)						
1.	Shuttle run (s)	14,4±0,34	14,07±0,34	0,69	2,12	>0,05
2.	Static balance (s)	10,25±0,34	10,42 ± 0,3	0,37	2,12	>0,05
3.	Tossing and catching the ball (number of times)	12,57 ± 0,29	12,14 ± 0,54	0,70	2,12	>0,05
4.	Bouncing the ball off the wall (number of times)	9,42±0,46	9,52±0,7	0,12	2,12	>0,05
5.	Jumping rope (number of times)	14,28 ±0,73	13,85±0,86	0,38	2,12	>0,05

During the testing of fitness athletes at the age of 8-9 years of both groups at the beginning of the pedagogical experiment, unreliable results were not determined according to the Student's criterion (p>0,05). This allows us to state that the

development of coordination abilities among athletes of both groups does not have a significant difference..

In the course of the pedagogical experiment, the educational and training process in fitness was carried out in accordance with the curriculum, where the educational and training process of fitness athletes in the control group (CG) was conducted according to the traditional method, and in the study of the development of the coordination abilities of athletes in fitness of the main group (CG) we used sets of exercises that included spatial and dynamic biomechanical characteristics.

During the pedagogical experiment, the dynamics of the development of coordination abilities in the control and main groups was revealed, presented in Tables 2 and 3.

Table 2

Statistical indicators of the development coordination abilities of fitness athletes at the age of 8-9 years from the CG during the pedagogical experiment

№	Test	Results		t_p	t_{gr}	P	IN %
		Initial	Final				
	Boys (n=8)						
1	Shuttle run (s)	12,82±0,21	12,36± 0,27	1,34	2,31	> 0,05	3,6
2	Static balance (s)	9,94±0.32	10,26± 0.45	0,58	2,31	> 0,05	3,2
3	Tossing and catching the ball (number of times)	14,4±0,34	15,6 ± 0,75	1,46	2,31	> 0,05	8,3
4	Bouncing the ball from the wall (number of times)	11,4±0,64	12,8± 0,42	1,83	2,31	> 0,05	12,2
5	Jumping rope (number of times)	11,0±0,91	11,59 ±0,79	0,49	2,31	> 0,05	5,4
	Girls (n=9)						
1	Shuttle run (s)	14,4±0.34	13,9 ± 0,35	1,02	2,30	> 0,05	3,5
2	Static balance (s)	10,25 ±0,34	11,05 ±0,26	1,87	2,30	> 0,05	7,8
3	Tossing and catching the ball (number of times)	12,57 ±0,29	14,42± 0,81	2,15	2,30	> 0,05	14,7
4	Bouncing the ball from the wall (number of times)	9,42±0,46	11,17 ± 0,7	2,09	2,30	> 0,05	18,6
5	Jumping rope (number of times)	14,28 ±0,73	16,0 ± 0,85	1,54	2,30	> 0,05	12,1

Comparison of the indicators of the initial and final testing of the CG showed an increase in all indicators of the proposed tests. At the same time, considering the

average group changes, it can be noted that the increase in the indicators of the development of coordination abilities among athletes is not uniform. So, the highest percentages were found in boys, where a statistically insignificant increase in indicators was found in bouncing the ball from the wall 8,3 % (t_p =1,46; p>0,05); and tossing and catching the ball 12,2% (t_p=1,83; p>0,05), characterizing the level of orientation in space. Indicators of tests and their percentages are: jumping rope, characterizing the level of development of coordination of movements 5,4% (t_p=0,49; p>0,05); shuttle run, which characterizes the development of spatio-temporal parameters 3,6% (t_p=1,34; p>0,05) and in static equilibrium, which characterizes the level of termination of macroscopic mechanical systems and body movement 3,2% (t_p=0,58; p>0,05) changed in the direction of improving the results, but the indicators were also statistically insignificant. Somewhat better indicators of the dynamics of the development of coordination abilities in girls of the control group.

So, the highest percentages were found in girls, where a statistically insignificant increase in indicators was found in bouncing the ball from the wall 18,6% (t_p=2,09; p>0,05); tossing and catching the ball 14,7 % (t_p=2,15; p>0,05), characterizing the level of orientation in space. Indicators of tests and their percentages are: jumping rope, characterizing the level of development of coordination of movements 12,1% (t_p=1,54; p>0,05); shuttle run, which characterizes the development of spatio-temporal parameters 3,5 % (t_p=1,02; p>0,05) and in static equilibrium, which characterizes the level of termination of macroscopic mechanical systems and body movement 7,8 % (t_p=1,87; p>0,05) changed in the direction of improving the results, but the indicators were also statistically insignificant.

Comparison of indicators of initial and final testing of athletes of the main group showed an increase in all indicators of the proposed tests.

Table 3

Statistical indicators of the development coordination abilities of fitness athletes at the age of 8-9 years from the MG during the pedagogical experiment

№	Test	$\overline{X}$ ±m		t_p	t_{gr}	P	IN %
		In the beginning	In the end				
	Boys (n=8)						
1	Shuttle run (s)	12,6 ±0,18	11,2 ±0,29	4,10	2,31	<0,01	11,2
2	Static balance (s)	9,9±0,46	11,8±0,38	3,18	2,31	< 0,05	19,1
3	Tossing and catching the ball (number of times)	14,8±0,41	17,8±0,41	5,17	2,31	< 0,001	20,3
4	Bouncing the ball from the wall (number of times)	10,2±0,41	15,2±0,65	6,51	2,31	< 0,001	49,1
5	Jumping rope (number of times)	11,8±0,82	15,4±0,57	3,60	2,31	< 0,01	30,5
	Girls (n=9)						
1	Shuttle run (s)	14,07±0,34	12,8±0,26	2,97	2,30	< 0,05	9,1
2	Static balance (s)	10,42 ± 0,3	12,77± 0,35	5,10	2,30	< 0,001	22,5
3	Tossing and catching the ball (number of times)	12,14 ± 0,54	16,42 ± 0,21	7,39	2,30	< 0,001	35,2
4	Bouncing the ball from the wall (number of times)	9,52±0,7	14,28±0,69	4,84	2,30	< 0,01	50,0
5	Jumping rope (number of times)	13,85±0,86	18,85 ±0,42	5,22	2,30	< 0,001	36,1

Considering the middle group configurations, it can be noted that the increase in the indicators of the development of coordination abilities among the athletes of the main group is significantly higher. This confirmation has the results shown as a percentage of their difference. In boys, this is a statistically significant increase in indicators, which was found in the bouncing the ball from the wall 49,1 % (t_p=6,51; p<0,001); and jumping rope (number of times) 30,5% (t_p=3,60; p<0,01), characterizing the level of development of coordination of movements. Indicators of tests and their percentages: tossing and catching the ball (number of times), characterizing the level of orientation in space 20,3% (t_p=5,17; p<0,001); static equilibrium, which characterizes the level of termination of macroscopic mechanical systems and body movement 19,1% (t_p=3,18; p<0,05); shuttle run, which characterizes the development of spatio-temporal parameters 11,2 % (t_p=4,10;

p<0,01). The test indicators and their percentages indicate positive changes in the direction of improving the results, which, according to the Student's criterion, turned out to be statistically significant (p<0,05). As in the control group, and in the main group, girls showed the best results.

So, the highest percentages were found in girls, where a statistically significant increase in indicators was found in the bouncing the ball from the wall 50,0% (t_p=4,84; p<0,01) and tossing and catching the ball 35,2 % (t_p=7,39; p<0,001), characterizing the level of orientation in space. Indicators of tests and their percentages: jumping rope, characterizing the level of development of coordination of movements 36,1% (t_p=5,22; p<0,001); static equilibrium, which characterizes the level of termination of macroscopic mechanical systems and body movement 22,5% (t_p=5,10; p<0,001); shuttle run, which characterizes the development of spatio-temporal parameters 9,1% (t_p=2,97 p<0,05). The test indicators and their percentages indicate positive changes in the direction of improving the results, which, according to the Student's criterion, turned out to be statistically significant. (p<0,05). When comparing the indicators of the development of the coordination abilities of fitness athletes of the main and control groups, the reliability of the results is observed in all test indicators, which is reflected in Fig. 1 and 2.
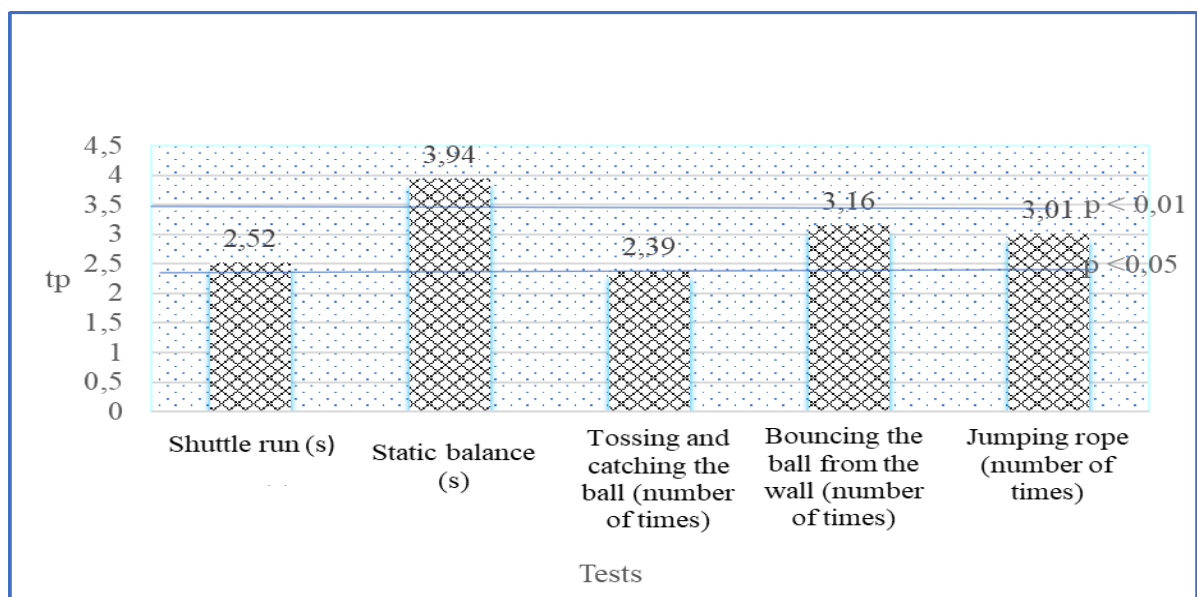

Fig. 1. Reliability of indicators of the development of coordination abilities of fitness athletes (boys) in the main and control groups after a pedagogical experiment
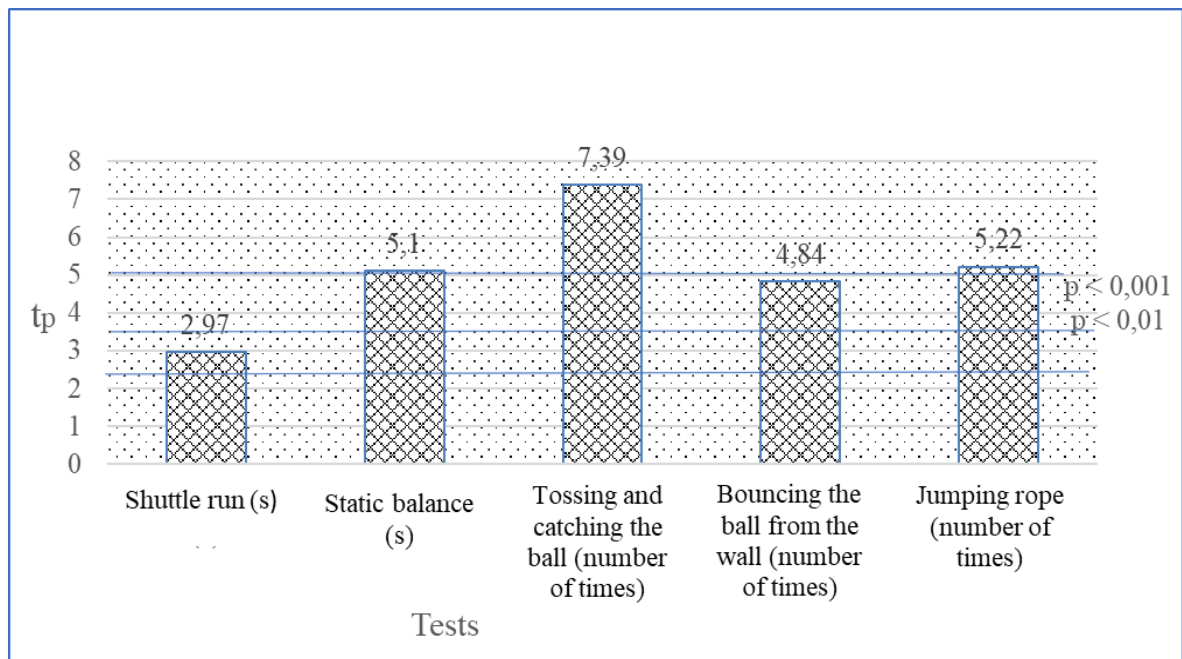
Fig. 2. Reliability of indicators of the development of coordination abilities of fitness athletes (girls) in the main and control groups after a pedagogical experiment

Conclusions / Discussion

The results of the study indicate the relevance of the issues under consideration, where experts in the field of physical culture and sports indicated the need to study approaches to improving the development of physical qualities of young athletes [9, 10, 19]. The study of scientific and methodological literature and informative sources of the Internet [14, 15, 16] gave grounds for generalization and the need to address the issues of the development of coordination abilities of young athletes in fitness. The obtained results of the study confirm the expediency of using a set of exercises with spatial and dynamic biomechanical characteristics in the educational-training process of the main group. The results of the study are shown by the athletes of the main group, in comparison with the results of the control group, the improvement of the pedagogical experiment have statistical significance within the limits of $p<0,05$ and $p<0,01$, which gives grounds to ascertain the significant influence of a complex of exercises with spatial and dynamic biomechanical characteristics on development of the coordination abilities of fitness athletes.

Prospects for further research. Subsequent studies will be devoted to establishing the characteristics of the influence of choreography on the level of

technical readiness of young fitness athletes.

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