Methodology for improving the general physical fitness of qualified para judokas

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Abstract

Purpose: Development of a methodology for improving the general physical fitness of qualified para judokas.
Methods: The study uses methods of analysis of scientific and methodological literature, questionnaires; pedagogi cal observations; biomedical methods, control tests char acterizing special preparedness, pedagogical experiment, mathematical and statistical data processing.
Results: In the test of raising and lowering the torso in 1 minute while lying on the back, the indicators of the participants of the experimental group at the end of the experiment were 54.42 times (P<0.001), the indicators of the control group at the end of the experiment were 49.33 times (P>0.05), the difference between them was 5.09 times.
Conlcusion: Thus, the indicators of the para judokas of the experimental group at the end of the experiment in the dynamometer compression test (right palm strength) were 71.42 kg, and in the left palm strength test - 66.58 kg (difference 4.84 kg) (P<0.01). In the control group, at the end of the experiment, the dynamometer pressure test (right palm strength) was 55.83 kg, and the left palm strength test was 61.92 kg (difference 6.09 kg) (P>0.05).

Keywords: qualified para judokas, training process, physical training, methodology.

Introduction

Para judo, one of the most popular parasports in the world, also has its own status. Improvement of results is associated with the requirements for ensuring uncompromising struggles, technical and tactical actions of para judokas. The intensification of competition in world para judo is characterized by a high density of shown results. Research has been conducted on improving the technical and tactical training of qualified para judo athletes in preparing them for important competitions, analyzing their competitive activity.

In our republic, great attention is paid to the development of physical culture and sports. The results achieved by our country's para judokas at the world championships, the Para Asian and Paralympic Games are noteworthy. The significance of para judo lies in identifying the specific features of comprehensive training in competitive activity.

This research is relevant for the implementation of the tasks defined in the Decree of the President of the Republic of Uzbekistan dated February 14, 2022 No. PP-127 "On the Comprehensive Preparation of Athletes of Uzbekistan for the XXXIII Summer Olympic and XVII Paralympic Games 2024 in Paris (France)," the Decree of the President of the Republic of Uzbekistan dated June 20, 2022 No. PP-286 "On Measures for the Further Development of Judo," the Decree of the President of the Republic of Uzbekistan dated November 3, 2022 No. PP-414 "On Measures for the Further Improvement of the System of Personnel Training and Scientific Research in the Field of Physical Culture and Sports," as well as in other regulatory legal documents adopted in this area [1,2,3].

Results and discussion

In order to approbate the developed methodology for improving the physical fitness of qualified para judokas, a study was organized. The research was conducted at the Republican Center for Training in Olympic and Paralympic Sports. A total of 24 qualified para judokas participated in the study.

The following tests were used to determine the indicators of general physical fitness of qualified para judokas: right palm strength, left palm strength, shuttle run 3x10 meters, standing long jump, hanging on a horizontal bar with bent arms, running 30 meters, raising and lowering the body in a supine position within 1 minute. The results of the experimental and control groups obtained at the beginning of the study are presented in Table 1 and Figure 1.

As can be seen from the table, in the pressure test of the dynamometer (power of the right palm) of the para judokas of the experimental group, it was 61.08 kg, and in the left palm strength test - 56.17 kg (difference 4.91 kg). In the shuttle run 3x10 meters, the indicators of the subjects of the experimental group were 7.97 seconds. The indicators of the control group participants were 7.76 seconds (the dif-

ference was 0.21 seconds). In the standing long jump test, the indicators of the athletes of the experimental group were 217.92 meters, and the indicators of the control group were 221.67 meters, the difference between them (3.75 meters).

In the hang with bent arms on the horizontal bar, the indicators of the athletes of the experimental group were 54.92 seconds, and the indicators of the athletes of the control group were 54.21 seconds.

The difference between them was 0.71 seconds. In the 30m running test, the indicators of the subjects of the experimental group were 5.27 seconds, and the indicators of the control group were 5.37 seconds, the difference was 0.1 seconds. In the test of raising and lowering the torso in 1 minute while lying on the back, the indicators of the participants of the experimental group were 43.83 times, while the indicators of the control group were 42.75 times, the difference between them was 1.08 times. From the obtained results, it can be concluded that the indicators at the beginning of the experiment for all tests applied to the experimental and control groups were unreliable [4,6,7,13].

Analysis of the research results showed that the differences between the indicators of general physical fitness of para judo athletes of the experimental and control groups are relatively close to each other.

In order to improve physical qualities in the annual training cycle, a complex methodology was introduced into the training process, consisting of bending and straightening the arms with support, pull-ups on the horizontal bar, short-distance running, shuttle running, abdominal muscle development, running 800 meters, squats with hands behind the head for 50 meters, squats with a barbell on the shoulder. [5,8,9].

This complex of exercises was introduced as a separate lesson once a week. At the end of the experiment, the general physical fitness of the experimental group of para judokas improved (see Table 2).

Table 1. Statistical comparison of the indicators of general physical fitness of qualified para judokas of the experimental and control groups at the beginning of the study (n=24)

	Experimental group			Control group						
Test	$\overline{X}$	σ	V, %	$\overline{X}$	σ	V, %	*AF*	*NF*	*t*	*P*
Right hand strength	61,08	8,92	14,60	62,42	9,34	14,96	1,33	2,18	0,36	>0,7
Left hand strength	56,17	7,66	13,64	55,42	7,75	13,98	0,75	1,34	0,24	>0,8
3x10m shuttle run (sec.)	7,97	1,16	14,61	7,76	1,16	14,94	0,20	2,56	0,43	>0,6
Standing long jump (m/cm)	217,92	29,71	13,63	221,67	30,92	13,95	3,75	1,72	0,30	>0,7
Hang on horizontal bar with bent arms (sec.)	54,92	8,57	15,61	54,21	8,65	15,96	0,71	1,29	0,20	>0,8
30m Run	5,27	0,72	13,63	5,37	0,75	13,97	0,11	2,02	0,36	>0,7
Lifting and lowering of the torso in 1 minute while lying on the back (times)	43,83	5,97	13,62	42,75	5,98	13,99	1,08	2,47	0,44	>0,6

In the 3x10 meter shuttle run test, the indicators of the subjects of the experimental group at the end of the experiment were 7.76 seconds (P<0.001), while the indicators of the participants of the control group at the end of the experiment were 7.97 seconds (the difference was 0.21 seconds) (P>0.05). In the standing long jump test, the indicators of the athletes of the experimental group at the end of the experiment were 280.33 meters (P<0.001),

Table 2. Statistical analysis of the dynamics of changes in the indicators of general physical fitness of the subjects of the experimental and control groups during the study.

Test		At the beginning of the experiment			At the end of the experiment			Abs. growth	Relative growth	t	P
		$\overline{X}$	σ	V, %	$\overline{X}$	σ	V, %				
Right hand strength	EG	62,42	8,11	12,99	71,42	6,24	12,14	11,00	17,62	3,72	<0,01
	CG	61,08	7,72	12,64	55,83	6,97	12,48	5,25	8,59	1,75	>0,05
Left hand strength	EG	55,42	7,75	13,98	66,58	8,74	13,13	11,17	20,15	3,31	<0,01
	CG	56,17	7,66	13,64	61,92	8,34	13,47	5,75	10,24	1,76	>0,05
3x10m shuttle run (sec.)	EG	9,28	1,01	12,99	7,76	1,13	12,18	1,51	19,48	3,46	<0,01
	CG	8,72	1,01	12,68	7,97	1,09	12,50	0,75	9,45	1,75	>0,05
Standing long jump (m/cm)	EG	221,67	30,92	13,95	280,33	36,85	13,15	58,67	26,47	4,22	<0,001
	CG	217,92	29,71	13,63	245,08	33,06	13,49	27,17	12,47	2,12	<0,05
Hang on horizontal bar with bent arms (sec.)	EG	54,21	8,11	14,96	66,96	9,46	14,13	12,75	23,52	3,54	<0,01
	CG	54,92	8,05	14,66	61,00	8,83	14,48	6,08	11,08	1,76	>0,05
30m Run	EG	5,37	0,70	12,97	4,43	0,54	12,13	0,95	17,65	3,73	<0,01
	CG	5,27	0,67	12,62	4,81	0,60	12,46	0,45	8,61	1,75	>0,05
Lifting and lowering of the torso in 1 minute while lying on the back (times)	EG	42,75	5,98	13,99	54,42	7,15	13,14	11,67	27,29	4,34	<0,001
	CG	43,83	5,97	13,62	49,33	6,65	13,48	5,50	12,55	2,13	<0,05

The indicators of the control group at the end of the experiment were 245.08 meters, their difference was 35.25 meters (P>0.05). In the hanging test with bent arms on the horizontal bar, the indicators of the athletes of the experimental group at the end of the experiment were 66.96 seconds (P<0.01), the indicators of the athletes of the control group at the end of the experiment were 61.00 seconds (P>0.05).

The difference between them was 5.96 seconds. In the 30-meter running test, the indicators of the subjects of the experimental group at the end of the experiment were 4.43 seconds (P<0.01), the indicators of the control group at the end of the experiment were 4.81 seconds (P>0.05), the difference was 0.56 seconds.

Conclusion

Analysis of scientific and methodological literature shows that a number of studies have been conducted on a comprehensive approach to the training process in the training of para judokas. However, scientific works on the comprehensive improvement of the general physical training of para judokas have not been sufficiently covered.

The introduction of the methodology recommended by us into the training process of qualified para judokas contributed to the improvement of their physical fitness indicators. This, in turn, has a positive effect on improving the technical skills of athletes and improving sports results.

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