

CONTROL OF PHYSICAL FITNESS OF ATHLETES SPECIALIZING IN COMBAT SAMBO

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Annotation. Confiscation of informative educational tests to assess motor qualities of skilled athletes. The survey was attended by 94 athletes (18 to 30 years). This group of tests includes: running too far on the bridge (second) coups in space (second); perform 100 punches on the punching bag (second), perform 50 kicks on the punching bag (second). It was found that the highest correlation between the result and the qualifications of athletes seen in tests involving the use of wrestling skills (rushing on the bridge and from the place of revolutions). It is shown that in the groups of athletes of medium and heavy weight categories in tests measuring the speed of the application of various attacks on the punching bag have a weak relationship with the level of sportsmanship. The trend is strengthening correlation sports training and exercise, describing the power of athletes of different skills to increase their weight classes.

Keywords: control, test, physical fitness, combat sambo.

Introduction

In modern conditions training process is built on the base of objective information about state of sportsmen's motion function, which permits to prepare them on level of requirements, appropriate for controlled processes [4]. In this connection it is necessary to ensure permanent, purposeful control of effectiveness sportsmen's training by mean of physical condition's evaluation, which consists of combination of interconnected indicators: physical workability, functional state of organs and systems, physical condition, physical development [1, 6].

However, any research is connected with certain difficulties, as far as it requires significant time periods and energy consumption from the tested as well as application of modern apparatuses. Very often coach needs prompt information about current physical state for further correction, for predicting of results in competition season and sports prospects, for revelation of strong and weak sides of his disciple's physical preparedness [3, 7]. It can be required in the frames of training process for evaluation of functional progress's level and for selection of prepared sportsmen for competitions [5, 10].

In this connection the most important is development of methodic, which would permit to evaluate sportsman's preparedness in the most confident way and in the shortest time [3, 5, 7, 9].

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Purpose, tasks of the work, material and methods

The purpose of the research is to select informative pedagogic tests for evaluation of motion abilities of qualified sambo-sportsmen for researching of their physical preparedness.

The methods of the research. The tests and examinations were carried out with assistance of sport club "Kyiv center of self-defense" on sport bases of National agrarian university, Suvorov Military School, CSCA (Kyiv). In the research 94 sportsmen took part. They were of age from 18 to 30 years old, among them there were 2 IMS, 28MS, 32 CMS, 32 – of 1st grade.

Group of tests «speed endurance» and «special» were to be fulfilled with one attempt. For group of tests «quickness», «explosive power» there were given three attempts and the best results were registered. In tests, connected with demonstration of maximal strength (initial weight was ordered by tested himself), in every following attempt weight was increased by 5 kg, until it was impossible for the tested to raise the weight.

Results of the researches

With the help of analysis of combat sambo coach's practical experience, scientific and scientific-methodic literature in martial arts, we determined that speed-power abilities of sportsmen are the most important feature of wrestlers' physical preparedness [4, 6]. In this connection we selected pedagogic tests, which characterize different sides of speed-power sambo-sportsmen's preparedness and are used win testing of martial arts sportsmen of other specializations [1, 6, 8]. The offered tests were divided in 4 groups as per their qualitative orientation:

1. Speed endurance: rising of torso from lying position in sitting one during 1 minute (quantity of times); 400 meter run from high start (seconds).
2. Quickness: 30 meters run from high start (sec.); chin-ups during 10 seconds (quantity of times).
3. Explosive power: long jump from the spot (m); putting the shot (4 kg) from below-forward (m); putting the shot from below – backward (4 kg, m).
4. Maximal strength: bench press (kg); snatching (kg); half-squat with weight (kg); dynamometry of hand (kg).

For estimation of special physical preparedness we selected tests with elements of competition activity of sambo-sportsmen and are widely used in testing of sportsmen of other martial arts' kinds. Group of «special» tests

included: running from bridge (sec.); overturns from the spot (sec.); 100 punches on punching bag (sec.); 50 kicks on punching bag (sec.).

All tests were selected, considering specificity of this kind of sports and were fulfilled in equal for all tests conditions independent on sportsman's qualification. For better interpretation of data all examined sportsmen were divided into three groups, depending on their weight category:

1. Light weigh category (up to 52 kg, up to 57 kg, up to 62 kg);
2. Middle weight category (up to 68 kg, up to 74 kg);
3. Heavy weight category (up to 82 kg, up to 90 kg, above 90 kg).

In the course of the research we determined indicators of physical preparedness of sportsmen of different qualification, specializing in combat sambo.

However, analysis of absolute values of results, obtained in offered by us tests, does not completely reflect interconnection of one or another indicator with level of sambo-sportsmen's qualification.

For evaluation of interconnections' degree between sport qualification and indicators of sambo-sportsmen's physical preparedness we used method of pair correlation of the studied indicators.

As it is known, the most important characteristic of correlation between two variables is strength of connection, which is determined by correlation coefficient (r). This indicator can take values from 1 to -1, with it, if its value is closer to 1, it means presence of strong connection, if it is closer to 0 – it is weak connection [2].

Table 1

Correlation interconnection of sport qualification and testing results of sambo sportsmen's physical preparedness

Test	Sportsmen		
	Light weight	Middle weight	Heavy weight
Torso rising from lying in sitting position	0.633**	0.692**	0.201
30 m run, sec. from high start	-0.599**	-0.27	-0.136
Long jump from the spot, m	0.4**	0.333	0.189
400 m run, from high start, sec.	0.213	0.335	0.106
Chin ups for 10 sec (q-ty of times)	0.752**	0.551**	0.302
Right hand dynamometry, kg	0.553**	0.575**	0.488**
Left hand dynamometry, kg	0.469**	0.704**	0.586**
Bench press, kg	0.679**	0.603**	0.723**
Snatching (kg);	0.503**	0.664**	0.833**
Half squat with weight, kg	0.668**	0.574*	0.736**
Putting the shot (4 kg) from below-forward, m	0.682**	0.809**	0.604**
Putting the shot (4 kg) from below-backward,	0.701**	0.822**	0.639**

Notes: *- $p \leq 0.01$; ** - $p \leq 0.05$

As per results of testing there are high values of correlation in light weight category in chin ups for 10 sec. $r = 0.752$ ($p < 0.01$), 30 m run $r = -0.599$ ($p < 0.01$), which reflect high level of quickness and in putting the shot from below-forward $r = 0.682$ ($p < 0.01$) and from below- backward $r = 0.701$ ($p < 0.01$), which characterize sportsmen's, specializing in combat sambo, explosive power. 400 m run is a non-informative exercise for light weight sambo-sportsmen.

The highest correlation coefficients og middle weight sportsmen were obtained in putting the shot from below-forward $r = 0.809$ ($p < 0.01$) and from below-backward $r = 0.822$ ($p < 0.01$), which characterize sportsmen's, specializing in combat sambo, explosive power and witness about great significance of this quality for efficiency of martial arts' sportsmen. Such tests as 30 m run and 400 m run from high start were non-informative for this weight category as well as long jump from the spot.

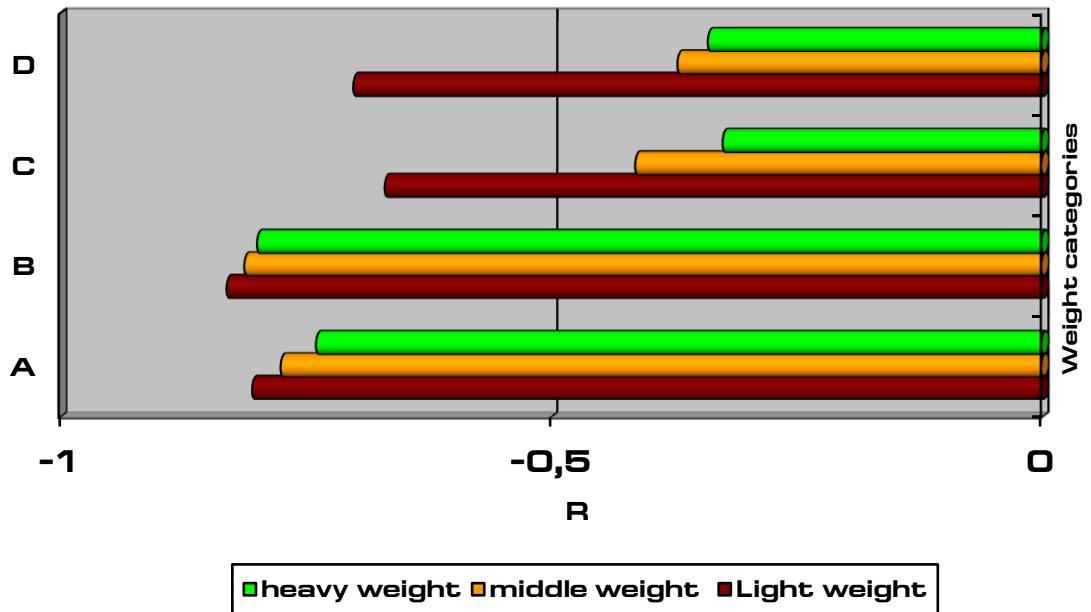


Fig.1. Results of pair correlation's analysis between physical preparedness and qualification of martial arts' sportsmen, specializing in combat sambo

A –running from bridge
B – turnovers from the spot
C – 100punches on punching bag;
D - 50 kicks on punching bag

Correlation analysis of heavy weight sambo-sportsmen's results showed weak interconnection between qualification and results of the following tests: 30 and 400 m run from high start, torso rising from lying in sitting position, long jump from the spot and chin-ups for 10 seconds. The closest connection was registered in tests, connected with demonstration of maximal strength: snatching $r = 0.714$ ($p < 0.01$), bench press $r = 0.833$ ($p < 0.01$) and half squat with weight $r = 0.736$ ($p < 0.01$).

Studying of correlation connection of results of different weight categories' sportsmen, demonstrated in different pedagogic tests, with their sport qualification showed that for all weight categories high connection in special exercises (turnover from the spot and running from bridge) is characteristic.

Testing of special physical preparedness showed that in exercises with elements of fight, MS demonstrated better results than CMS and 1st grade sportsmen (fig.1) In tests, for measuring of punches (kicks) on punching bag, groups of middle and heavy weight sportsmen showed weak connection between results and qualification level. In our opinion it witnesses that with rising of sport qualification some sportsmen pay little attention to training of punching (kicking) technique, relying on their more effective application of wrestling skills in competition duel.

As it has been shown above results of different weight categories' sambo-sportsmen significantly vary in one and the same tests. In our opinion it depends on different physical qualities. Accordingly, in the process of physical training's control there is a need in applying of only those exercises, which are interconnected with efficiency of sportsmen of certain category.

Conclusions:

1. We have selected complex of tests, which permit to objectively evaluate sportsmen's, specializing in combat sambo, physical preparedness.
2. It has been determined that with rising of sport qualification, sambo-sportsmen's results in tests, oriented on speed-power abilities, are improved.
3. The highest correlation dependence between results and qualification of martial arts' sportsmen of all weight categories was found in tests, connected with application of wrestler's skills, videlicet: running from bridge and turnover from the spot.
4. It was registered that results of tests for quickness of different blows on punching bag have weak connection with sportsmanship of sambo-sportsmen of middle and heavy weight categories.
5. Light weight sambo-sportsmen demonstrated high connection between quickness and sport qualification.
6. There was registered certain trend to increasing of correlation connection between qualification and exercises, which characterize strength of different qualification sportsmen with increasing of their weight category.

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