

IMPROVEMENT OF MANAGEMENT BY TRAINING PROCESS OF BOXERS AT A STAGE OF DIRECT PREPARATION FOR COMPETITIONS

Kiprych S.V.¹, Donets A.V.¹, Makhdi Omar Ali²
Poltava V.G. Korolenko National Pedagogical University¹
National University of Physical Education and Sport of Ukraine²

Annotation. The purpose of work is perfection of estimation of the special capacity and increase on this basis of efficiency of training process of boxers control. 27 skilled sportsmen took part in research. The estimation of training impulse is conducted - integral index of reaction of the cardiorespiratory system. Trainings employments were standardized on duration (40 minutes) and orientation on development speed-power qualities, endurance. Three groups of trainings employments were utilized in all. The degree of tension of training work was determined. It is set that perfection of training process in boxing can be based on the estimation of changes a capacity and reactive properties of the cardiorespiratory system of sportsmen. The orientation of training process is certain and the individual parameters of the trainings loadings are chosen.

Keywords: boxing, capacity, cardiorespiratory system, management.

Introduction

Increasing of competition experience is an urgent direction of sports training system's improvement as an effective mean of mobilization of functional reserves of sportsmen's organism, stimulation of adaptation processes and, on this base increasing of training's effectiveness [7]. Realization of this direction is rather important for boxing, where not only quantity of prestige competitions has increased recent time, but also steady trend to changing of competitions' structure has appeared, which now often includes duels, consisting of 5 rounds. In this connection searching of new forms of training process's control is rather important, especially for periods of direct preparation for competitions [5,8,11].

It is well known fact that stage of direct preparation for competition has its own specificity. It is connected with high intensity of training process, its expressed orientation on achievement of positive results in certain competitions [7]. It requires complying of training process with targets of this training's stage. In this connection receiving of objective information about sportsmen's state before the stage of direct preparation became extremely important, as well as optimization of training on the base of this information [4]. Individual sportsman organism's response to load and selection on this base of training programs, which would be expressively stimulating, play very important role in this process [2,6]. Realization of this process is connected with control of training on the base of estimation of sportsmen/s current state and optimization of correlation's "doze-effect" influence at every training [1]. The base of this process can include integrated methods of estimation of external and internal sides of load, which determine orientation of training process and its individualization at the stage of direct preparation for competitions [3]. System of control and estimation of workability in boxing is regarded in interconnection with other control functions and first of all with system of training means and, connected control, means of training process's individualization [8,9]. At the same time it is clear that means of control's realization require upgrading and foundation of new approaches to its improvement. It is connected with new conditions of boxing competitions' organization.

Systemic principles of theory of sports' periodization and connected with them regularities of adaptation processes' formation are in the base of training process's improvement [7]. With it, ability to quickly and adequately response to training and competition loads is an effective criteria of successful sport training on this stage [6]. These factors compose the base of training process's control at the stage of direct preparation for competitions. In this connection their improvement is an urgent direction of researches.

The work has been fulfilled as per combined plan of scientific & research works in sphere of physical culture and sports for 2011-2015 by topic 2.9 "Individualization of training process of qualified martial art sportsmen".

Purpose, tasks of the work, material and methods

The purpose of the work is improvement of pesical workability's evaluation and, on this base, increasing of effectiveness of boxing training process.

The method and organization of the research. In research 27 qualified sportsmen (masters of sports) took part. Their weight categories were 50.802-63.501 kg.

For evaluation of special workability we applied system "Spuderg -10" [9]. In the process of fulfillment of tests "8", "40", and "3x3" (system Spuderg-10) and with simulation of training tasks we ecaluated training impulse – integrated indicator of cardio-respiratosy systems's (CRS) response. It shows degree of training work's intensity and cracterizes correlation of "doze-effect" influence at training [10].

Results of the researches

Results of workability's evaluation after tests of system "Spuderg-10" are given in table 1.

Table 1

Indicators of special workability's level of qualified boxers (n=27)

Indicators	\bar{x}	S	CV
Test «8 sec»			
Punches, quantity	46.34	3.90	8.42
Tonnage of punches, conv. units	2000.65	101.10	5.05
Power of punches, conv. units . kg.sec ¹	3.54	0.17	4.80
Coefficient of "explosive endurance, conv. units	0.88	0.11	12.50
Kretine-phosphate workability's index , conv. units	144.91	5.00	3.45
Test «40 sec»			
Punches, quantity	202.92	19.60	9.66
Tonnage of punches, conv. units	6668.50	650.50	9.75
Power of punches, conv. units . kg.sec ¹	2.38	0.10	4.20
Coefficient of quickness' endurance, conv. units	0.63	0.04	5.60
Index of glycolitic workability, conv. units	125.35	10.70	8.54
Integral index of speed-power fitness, conv. units	270.17	29.10	10.77
Test «3x3»			
Punches in first 3-minutes period, quantity	195.95	15.20	7.76
Punches in seconf 3-minutes period, quantity	198.74	20.00	10.06
Punches in third 3-minutes period, quantity	210.08	25.60	12.19
Punches during all test, quantity	604.73	51.50	8.52
Tonnage of punches in first 3-minutes period, conv. units	11512.00	921.70	8.01
Tonnage of punches in second 3-minutes period, conv. units	10779.50	256.02	2.38
Tonnage of punches in third 3-minutes period, conv. units	10897.00	269.77	2.48
Tonnage of punches during all test, conv. units	33188.50	283.53	0.85

In the table it can be seen that all sportsmen had rather sufficient level of workability. With it, differences between correlation coefficients (CV%) were within 1,9% (mean indicators of the highest CV) (mean CV is 8,1±2,4%). On the one hand these data witness about uniformity of sportsmen's group, and on the other hand – about trend, with which individual differences in workability between some indicators are preserved. It can be assumed that in uniform group of sportsmen these differences are connected with current state of sportsmen, their workability to quickly and adequately, i.e. responsively, respond to load. In this connection It would be interesting to analyze responsive organism's abilities in the process of fulfillment of standard tests and to compare analysis's results with sportsmen's workability level.

For evaluation of organism's responsiveness to standard loads of system Spuderg-10 we estimated CRS response. Analysis showed that mean indicators of CRS response to tests of "Spuderg-10" were 21.6±3.6 conv. Units, with coefficient of variations 16.6% (see fig.1).

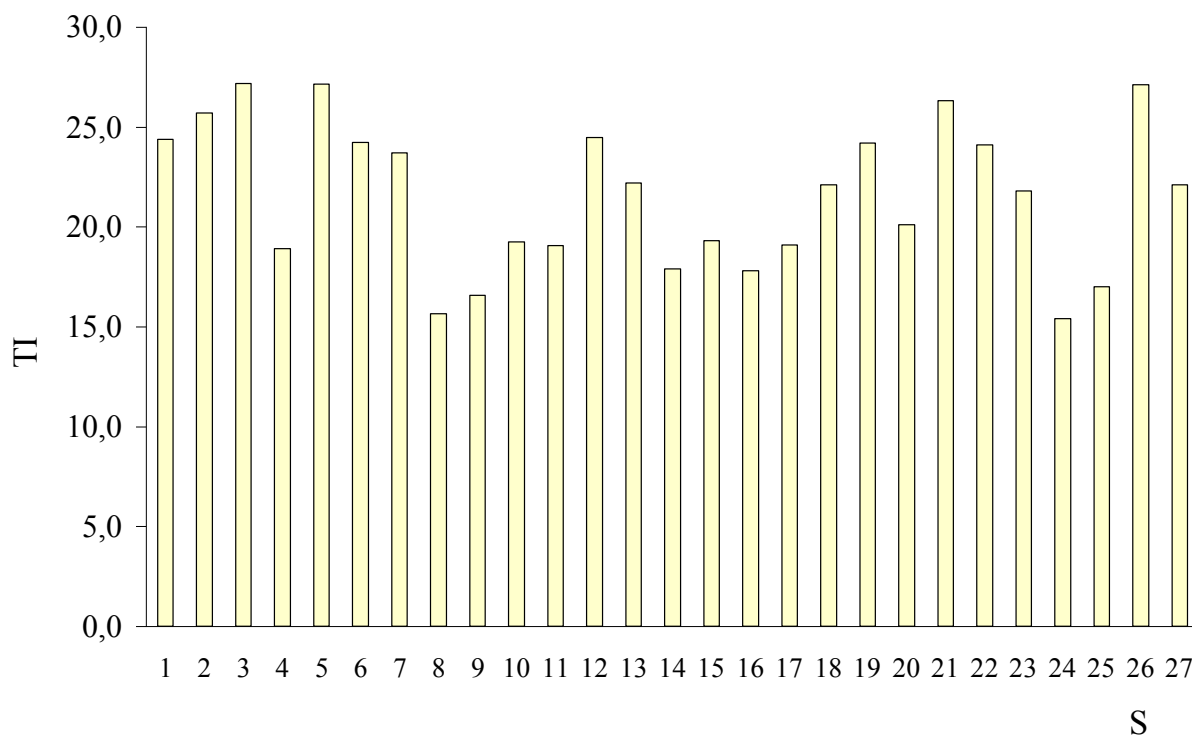


Fig.1. Individual differences between CRS' responses to loads in process of fulfillment of tests «8», «40» and «3x3» of testing system «Spuderg-10»:

TI – training impulse, indicator of response of cardi-respiratory system; S – sportsmen.

Also attracts attention high level of individual differences between CRS indicators. There is a ground to assume that such differences influence onsportsmen's workability. With it, we say about those sides of sportsmen's functional fitness, which characterize self- realization abilities of sportsmen. It was noted that their manifestations can be evaluated by responsiveness of CRS [6]. It is obvious that such regularities in uniform group of sporsmen can be determined on the base of analysis of individual data about combined manifestation of external and internal sides of load; in the given case – by indicators of special workability and CRS response.

Realization of such approach in boxing is important for building of training process at the stage of direct preparation for competitions. In this period load shall be of expressed stimulating character, which, first of all, is called for ensuring organism's ability to quickly, adequately and completely respond to competition loads. It is obvious that it is connected with training means, which ensure realization of individual responsive organism's features at trainings.

Possibility of such approach's realization was analyzed on the example of organism's response to nine standard trainings. For this purpose we used the method of optimization of correlation's "doze-effect" influence; we marked out identical, by orientation and duration, trainings, which showed the most expressed cardio-respiratory system's response. The trainings were marked out as a result of organism's evaluation, corresponding to duration and intensity of load. Trainings were standard by duration – 40 minutes- and by orientation on development of speed-power abilities, endurance with work od aerobic and anaerobic character. In total we used three groups of trainings, which were different by their structure, quantity of fulfilled accelerations and range of load's intensity.

The fulfilled analysis resulted in obtaining of confident differences of CRS response to load ($p < 0.05$). At trainings, oriented on development of quickness, training impulse indicators (integrated CRS response's indicators) were within from 21.5 ± 1.2 conv. units to 38.3 ± 1.3 conv. units. At training, oriented on development of endurance with work of aerobic character, the range of training impulse mean indicators was from 48.5 ± 1.1 conv. units to 73.6 ± 1.5 conv. units. At training, oriented on anaerobic endurance the range of mean training impulse indicators was from 76.0 ± 14 conv. units to 87.0 ± 1.3 conv. units.

In compliance with this approach we individually selected trainings, in which sportsmen had the highest CRS response. These trainings were recommended for application in training micro-cycles at the stage of direct preparation for competitions.

As a result of realization of control as a management's function and, on this base, individualization of training process we obtained higher indicators of boxers' special workability.

In test «8 sec» quantity of punches increased by 9.4%; index of kreatine-phosphate workability increased by 23%; integral index of kreatine-phosphate workability – by 23% ($p < 0.05$). In test «40 sec.» quantity of punches increased by 9.0%; index of glycolitic workability – by 19.1%; integral index of quickness fitness increased by 19.3% ($p < 0.05$). In test «3x3» quantity of punches in first round increased by 8.1%, in second round – by 8.8%, in third – by

7.1%; quantity of punches during all test increased by 8.0%; tonnage of punches in first 3-minutes period increased by 4.1%, in second – by 7.4%, in third – by 7.3%, tonnage of punches during all test increased by 6.2% ($p < 0.05$).

We also registered higher level of cardio-respiratory system response's indicators. Difference between indicators of training impulse, registered in test «3x3» before and after stage of direct preparation for competitions were 23.2% ($p < 0.05$). Difference between indicators of control and experimental group was, as per, index of kreatine-phosphate workability – 7.4%; by integral index of quickness fitness – 4.9%; by quantity of punches in test 3x3» – 2.6%; by tonnage of punches during all test - 2.7% ($p < 0.05$).

Results of the researches showed that improvement of training process's control at the stage of direct preparation for competitions can be based on analysis of external and internal sides of load. With it, differences in organism's responsiveness to load permit to choose those trainings, which have the highest stimulation influence on functional abilities of a sportsman.

Conclusions:

It has been established that improvement of training process's control at the stage of direct preparation for competitions in boxing can be realized in two directions.

The first direction – improvement of control as a management function of training process. In its base there is improvement of control system, directed on evaluation of sportsmen's workability. Realization of this direction is connected with integral analysis of special workability's indicators and individual evaluation of cardio-respiratory system's response in fulfillment of tests.

The second direction – is improvement of training process at the stage of direct preparation for competitions. It is based on choosing of optimal load parameters on the base of optimization of correlation "dose-effect". Realization of this direction is connected with analysis of structure of training, its duration and intensity and with determination of load with the highest level of cardio-respiratory system's response.

We have presented grounds for continuation of the present research. They are connected with development of control means, which could permit differentiate components of CRS response – kinetics, power and stability of response in conditions, stimulating competition's functioning and, on this base, increase specialized orientation of training.

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Information about the authors

Kiprych S.V.: kiprych@ukr.net; Poltava V.G. Korolenko National Pedagogical University; Ostrogradskii str. 2, Poltava, 36000, Ukraine

Donets A.V.: Strateg-24@mail.ru; Poltava V.G. Korolenko National Pedagogical University; Ostrogradskii str. 2, Poltava, 36000, Ukraine

Makhdi Omar Ali: rectorat@uni-sport.edu.ua; National University of Physical Education and Sport of Ukraine; Fizkultury str. 1, Kiev, 03680, Ukraine.

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