

ANALYZING OF PHYSICAL LOAD IN TRAINING AND COMPETITION ACTIVITY IN COMBAT SPORTS

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ABSTRACT

Analyzing training and competition load is important factor for identifying of athletes preparedness. In this article training and competition load of combat sports are studied. Results of the research showed that training load is lower than competition. According to these indicators coaches can plan their training and competition programs more efficiently.

Keywords: training; combat; physical load; analyzing; comparison.

INTRODUCTION

To pay training loads can give useful information for sportsmen during competition and training periods. Specialists are looking as significant and important part of sport. In this article are studied Heart Rate (HR) of athletes as the main factor to determine the physical load of training and competition activity. That's why aim of the work is to study and compare parameters of physical loads in training and competition activity.

Our research results showed that training and competition loads are different from each other. Intensity of competition load more frequency than training. It shows that coaches and specialists must planning training process according to competition load.

Modern sports keeping of higher sporting results are demand scientific bases of organizing of preparing process. The main problem of sport theory and practice are to planning pre-competition and competition period. Modern sport practice and experiments shows that training and competition load are different. Also, checking work capacity of combat sports in pre-competition period is important too. Through this way coaches and specialists can organize their future preparing plan fruitfully.

Today preparing system of sportsmen is showing that training processes are changing. We consider that preparing action is increasing than ever before. In our points not only training process is changing. According to the preparing competitions are changing. For example, competition's number include 10-15 times in annual cycle. This factor demands from athletes to be higher sport shape during the all matches.

MATERIALS AND METHODS

In our researches participated 29 athletes, and their average training experiences were $8,6 \pm 1,7$ year, and their average ages were $19,8 \pm 1,6$ year. Two of them were International levels, six of them were master of sports and three of them were candidates of master sports. Experiences organized during the three weeks before competitions and during the competitions (1. "Olympic Future-2021" – Regional competition, and, 2. Regional competition, 2021).

To study this problem we have analyzed special sources, manuscripts and other literatures. The preparing processes and practical works of the sport coaches have analyzed by us. During the preparing period we have identified the sportsmen's work capacity using the special tests (Gench and Shtange tests).

To comparing both training and competition load we checked Heart Rate in three positions - 3 minutes before training (before), during the maximal load (during) and 3-5 minutes after the training (after), when training finish. Characteristics of physical loads classified according to the F. Zerkin's classification.

RESULTS AND DISCUSSION

To check the athletes preparedness position and work capacity we implemented following two tests – Gench and Shtange ($n=11$). Test results played important role to know athletes' preparedness (**1-table**). Both tests results showed that combat sports preparedness were good. Taken results after tests explained that athletes preparing position were "good". Inter correlation coefficient (r) was calculated between the test results. Between the results observed positive correlation coefficient ($r=0,67$). After implementing tests we checked-up training and competition load combat sports during the training and competition periods.

**Table 1. Results of tests in pre-competition period athletes
 (n= 11, r=0,67)**

№	Tests	Indicators		
		X	σ	v%
1	Shtange	44,6	1,9	0,09
2	Gench	37,4	2,2	0,05

Some authors said that to identifying the training load opens future progress and training project. According to the some authors' points to solve this problem need to analyzing Heart Rate (HR) of athletes. To monitoring the physical load offered some recommendations by the authors.

To solve this task we measured Heart Rate of the athletes in both training and competition phases. In preparing time - a) before training, b) during the training – in maximal load phase, and, c) 3-5 minutes after training (recovery period). In competition period - a) before competition (before weight measuring); b) after combat (during the maximal load); and, c) 3-5 minutes after combat (recreation period).

Taken results showed that training and competition load different from each other. Average Heart Rate of the athletes during the training were 66,4±5,9 - in before training, 183,4±3,9 - in maximal load phase (during the training) and 70,8±2,6 - in recovery period.

In competition period Heart Rate were more higher than training. Heart Rate of athletes showed before competition (before weight measuring) - 72±2,9, after combat (during the maximal load) - 189,2±3,9 and 3-5 minutes after combat (recreation period) – 72,9±3,2. These indicators characterized that competition load is higher than training (**2-table**).

Table 2. Heart Rate of combat sports during the preparing and competition period (n=18).

Preparing period					Competition period				
№	Indicators	X	σ	v%	№	Indicators	X	σ	v%
1	HR before training	66,4	5,9	8,0	1	HR before weight measuring	72,0	2,9	4,0
2	HR during the training	183,4	3,9	2,1	2	HR after combat	189,8	3,8	2,0
3	HR in recovery phase	70,8	2,6	3,0	3	HR in recovery phase	72,9	3,2	4,3

According to the taken information we can characterize training load of preparing and competition process. If we analyze both the training and competition load we may see enough differences. For example, before training Heart Rate were $X - 66,4$, standard deviation is $\sigma - 5,9$ and coefficient of variation is $v\% - 8,0$. But these indicators in competition phase were more different than training. Before weight measuring Heart Rate is $X-72$, standard deviation is $\sigma - 2,9$ and coefficient of variation is $v\% - 4,0$.

During the training (during the maximal load) results were different, too. Heart Rate during the training is $X - 183,4$, standard deviation is $\sigma - 3,9$ and coefficient of variation is $v\% - 2,1$. And competition phase these indicators showed more higher than training. After combat Heart Rate were $X - 189,8$, standard deviation is $\sigma - 3,8$ and coefficient of variation is $v\% - 2,0$.

The final experiments showed that after combat Heart Rate were more higher than training period. In recovery time (after training) Heart Rate is $X - 70,8$, standard deviation is $\sigma - 2,6$ and coefficient of variation is $v\% - 3,0$. After combat Heart Rate is $X - 72,9$, standard deviation is $\sigma - 3,2$ and coefficient of variation is $v\% - 4,3$.

CONCLUSION

Results of our experiments showed that training and competition load not similar. According to the Heart Rate we can identify both training and competition physical load of the athletes. Through this way coaches may plan their training design.

During the combat physical load more higher than training. Because, some factors influence to the athletes as like emotion, psychological depressing and so one. In our opinion this condition is stable. It is true, that combat sports accept some emotional affect. But this position depends physiological bases as like physical load degree. Results of researches showed that competition loads more intensity than training.

To conclude, we restate once our belief that training and competition loads different. Coaches need to focus on to these factors for implementation their training process more efficiently.

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