

The Main Indices of the Training Level Among Qualified Weightlifters at the Stage of Pre-Competitive Training

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Abstract—The indices of the training level among qualified weightlifters are extremely important in pedagogical testing of the current control. The dynamics of the studied indices shows preferential and missing parts, which should be taken into consideration at the stages of sports training. Culminating moment of sports training among qualified weightlifters is pre-competitive stage. During this stage it is necessary to take into account the training level of athletes and define possible limits. In this connection the most informative index of the training level among qualified weightlifters is cardiovascular system functioning as a reaction to the fulfilled load.

Keywords—qualified weightlifters; cardiovascular system; loads; training level; working capacity; informative indices.

I. INTRODUCTION

The state of the training level at the stage of pre-competitive training among qualified weightlifters is an important factor, which defines high sports result, the main part of which is cardiovascular system working capacity [1, 2, 3].

Significant indices of cardiovascular system working capacity are reserve functions and regulatory mechanisms. They contain the main information about training loads influence on athletes organism. Control over the training loads influence on cardiovascular system functioning helps to correct sports training process, avoiding over-tension of the organism systems [4, 5, 6].

Qualified weightlifters' cardiovascular system working capacity has a phase character concerning the set loads, which is especially important at the stage of pre-competitive training.

Great volume of strength oriented training loads, in terms of its static character, claimed on an organism of qualified weightlifters, causes considerable cardiovascular system tension and can limit their special working capacity [7].

The aim of the research is to define the main indices of cardiovascular system functioning of qualified male weightlifters at the stage of pre-competitive training.

II. RESEARCH METHODOLOGY

During the research heart rate (HR), blood pressure, reserve functions and regulatory mechanisms of cardiovascular system were estimated with the help of Ruffier-Dickson test. The received results were organized according to the methodology, offered by A.O. Akopyan [8] and created in Federal State Budgetary Establishment Federal Scientific Center All-Russian Scientific Research Institute of Physical Culture, with the help of computer Excel program.

III. RESULTS

The training level control among qualified male weightlifters helped to define important indices, which provide high training of an organism, table I.

TABLE I. TRAINING LEVEL INDICES INTERCONNECTION AMONG QUALIFIED WEIGHTLIFTERS AT THE STAGE OF PRE-COMPETITIVE TRAINING

Indices	1 factor	2 factor
HR, at rest., beats/min	-0,914	-0,332
SBP, mm Hg	-0,636	-0,168
DBP, mm Hg	-0,347	0,900
HR, work., beats/min	-0,892	-0,144
HRrecov., beats/min	-0,825	-0,476
CF, c.u.	0,748	-0,376
RM, c.u.	-0,817	0,105
RF, c.u.	0,952	-0,265
Factor weight, %	62,1	17,7

At the stage of pre-competitive training two factors were defined among qualified male weightlifters, with general total weight 79,8%.

In the first factor, the weight of which is 62,1%, we define the importance of cardiovascular system reserve function (RF) ($f=0,952$), as the index which provides general working capacity of an organism; high HR validity at rest ($f=0,914$) shows the importance of basic vegetovascular system provision during pre-competitive training; the working value of HR and speed of its recovery ($f=0,892$ and $f=825$) shows cardiovascular system adaptation level to the set training loads; the value of regulatory mechanisms (RM) ($f=-0,817$) reflects the degree of cardiovascular system tension as a reaction to the fulfilled load; CF (cardiovascular system functioning) index ($f=0,748$) conditions the value of cardiovascular system functioning; the value of SBP (systolic blood pressure) ($f=-0,636$) characterizes the volume of cardiac output during athletes' special work provision.

In the 2nd factor we define special importance of DBP (diastolic blood pressure) ($f=0,900$), as the factor providing lower extremities during weightlifters' special work fulfillment.

The fulfilled research analysis showed that great importance of cardiovascular system functioning among qualified male weightlifters is at the stage of pre-competitive training. It provides reserve functions of cardiovascular system and the degree of its tension during great volume of special work fulfillment in terms of static tensions.

HR value at rest, working value and the speed of its recovery characterize adaptive abilities of vegetovascular system to big volume loads of static character.

Blood pressure indices, especially DBP show the degree of vegetovascular system tension and the degree of functioning during special work.

IV. CONCLUSION

Qualified weightlifters' training level indices interconnection shows main positions of qualified

weightlifters' functional systems control. They provide physical working capacity at the stage of pre-competitive training.

Connected parameters of the training level study defines the potential of current control direction among qualified weightlifters at the stage of pre-competitive training, from the point of view of a timely correction and the training process effectiveness increase.

References

- [1] Pokhachevskiy A.P., Abdullaeva K.G., Akulina M.V., Rekasha Y.M., Gadzhimuradov F.R. The peculiarities of heart rate in pre-start, loading and recovery periods of stress-test. *Theory and practice of physical culture*. 2019, 7, pp. 55-58.
- [2] Markin E.V., Shelkov M.V., Shcherbina A.F., Averyasov V.V., Kim L.G. Functional organism state of athletes who go in for polyathlon, taking into account heart rate variability indices. *Theory and practice of physical culture*. 2019, 7, pp. 59-61.
- [3] Orel V.R., Tambovtseva R.V. Heart contractility influence and its vascular load on heart rate of athletes. *Theory and practice of physical culture*. 2017, 2, pp. 30-32.
- [4] Skotnikov V.F., Solovev V.B. Speed-strength oriented training as the most important unit of special physical training: from theory to practice. *Scientific notes of P.F. Lesgaft University*. 2018, 4(158), pp. 296-300.
- [5] Sivokhin I.P., Belegov A.N., Skotnikov V.F., Federov A.I., Tapsir M., Kalashnikova A.P., Komarov O.Yu. Experimental estimation of different power training methods effectiveness. *Theory and practice of physical culture*. 2017, 11, pp. 77-82.
- [6] Konkova A.F., Vorobev A.A., Korzhenevskiy A.N., Kvashuk P.V., Sturchak I.S., Motorin E.V., Tarasova L.V. Thermodynamic analysis of metabolism as the means of quantitative estimation of adaptive transformations effectiveness in professional sport. *Bulletin of sports science*. 2014, 1, pp. 36-42.
- [7] Korzhenevskiy A.N., Tarasova L.V., Vorobev A.A., Kolokatova L.F. Complex diagnostics of highly-qualified weightlifters' readiness. *Theory and practice of physical culture*. 2012, 12, pp. 60-68.
- [8] Akopyan A.O., Kartashova A.V., Pankov V.A. About the question of trainings organization in terms of centralized training. *Bulletin of sports science*. 2016, 3, pp. 7-9.
- [9] Aleksandr S. Kuznetsov, Zinaida M. Kuznetsova. Untegrated application of rehabilitation means in circannian training cycle of highly Greco-roman style wrestlers. *Pedagogico-psychological and medico-biological problems of physical culture and sport*. 2017, vol. 12(4), pp. 6-14. DOI: 10/14526/04_2017_259