

BASIC NON-RUNNING TRAINING TOOLS FROM THE SECOND LEVEL FOR CLASSIC MOUNTAIN RUNNING IN A MODEL OF PREPARATION FOR THE "UP AND DOWNHILL" VARIANT - MACROSTRUCTURAL DISTRIBUTION

DOI: <https://doi.org/10.46733/PESH24131139s>

(Original scientific paper)

Aleksandar Simeonov¹, Kostadin Kisiov², Ratko Pavlović³

¹Ss. Cyril and Methodius University, Faculty of Physical Education, sport and health, Skopje, Macedonia

²NSA "Vassil Levski", Department of Track and field athletics, Sofia, Bulgaria,

³University of East Sarajevo, Faculty of Physical Education and Sport, BIH

Abstract

The current study discusses the basic non-running training tools from the second level. It presents the distribution of these training tools in the annual cycle of highly qualified racers in a preparation focused on classical mountain running in the variant "Up and Downhill". The research aims to establish a basic model of the volume by week of the basic non-running training tools from the second level, in the macrostructure for training aimed at classical mountain running in variant - "Up and Downhill". The following methods were used: a) research of the weekly volume of the training tools within the framework of the separate mezzo-cycles in the macrostructure and b) variation analysis of the data received from the training tools explored. The results give the following conclusions: The training tools for developing „strength endurance” have been used throughout the whole year. They have the highest values in the general preparation stage and at the beginning of the special preparation stage. The training tools for developing of the sub-factor „speed-strength potential” are included periodically in the training process in the middle of the special preparatory stage till the stage of the late competitions. The ratio between the volumes of the training tools for developing the sub-factors „strength endurance“ and „speed-strength potential“ is close to 2:1.

Keywords: *mountain running, trail running, off-road running, achievement factors, classification of the training tools, basic training tools, model of annual periodization*

Introduction

Mountain running is a very popular sport in many regions of the world. Its practice helps to strengthen the health and harmonious development of the person (Doichev, B. 2022). But besides being a mass sport, mountain running is also a sport in which World, Continental and Regional championships and commercial competitions are held, which require a very high level of specific training for the competitors. This creates the need to search for new training approaches through which to realize an advantage in the highly competitive environment of high-performance sports (Kisiov, K. 2022) and (Kisiov, K. 2020). However, we can admit that in the specialised methodological literature, there are no detailed models on the distribution of the training tools for the training of mountain runners. In our previous research, we created a model of sports performance constructed from hierarchically ordered factors and sub-factors of performance (shown in Figure 1) (Slavchev, A. Kisiov, K. (2016).

The purpose of the research is to define a principal annual model of distribution of the volume of the basic non-running training tools from the second level by weeks in a focused preparation for the competition variant „uphill and downhill“ in the classical mountain running. The model of achievement in mountain running, established in a previous study, is shown in Figure 1. (Dematteis, 2011).

The current study discusses the basic non-running training tools from the second level, which is significantly different from the so-called „competition exercise“. It presents the distribution of these training tools in the annual cycle of highly qualified racers in a preparation focused on classical mountain running in the variant "Up and Downhill".



Figure 1. Model of the sports result in mountain running.

The basic non-running training tools for the development of sub-factors from the second level are shown in Table 1 (Slavchev, A., Kisyov, K., Slavchev, I, I., Simeonov, A., Radich, Z. 2017).

Table 1. Basic non-running training tools for the development of the second-level sub-factors, the bioenergetic regime and the conditions under which they are performed.

Subfactors from the second level	Bioenergy Regime	Basic non-running training tools	Terms of performance
Strength endurance	Aerobic-anaerobic regime	Jumps and multi-jumps in difficult conditions Exercises with weights and strength complexes	Various motor activities with weights or in difficult conditions
Speed-strength potential	Anaerobic-non lactate regime	Speed-strength jumps and multi-jumps	Plain terrain

Methods

The research study objectives:

Defining the volume of the basic non-running training tools from the second level in the macrostructure of the preparation and the application of those tools according to factors of achievement.

Analysis of the distribution of the basic non-running training tools from the second level by weeks in the macrostructure.

The object of the research is the training and sport-racing activity in mountain running, and the **subject** is the basic non-running training tools from second level, used in the preparation of mountain runners.

The scope of the research is 29 training programs for mountain runners.

The **methodology** of the research includes:

Analysis of the scientific-methodology literature for long-running and mountain running.

Research the weekly volume of the training tools in the frame of the separate mesocycles in the macrostructure of the training programs of the runners.

Variation analysis of the data for training tools in the macrostructure.

One part of the researched literature sources are looking at the problems of the specialized diversity of the training tools (Harding, 2014; Kisyov, 2022), and other parts are considering the specific of the racing courses in mountain running (Kisyov, 2019; Kisyov, 2020) and training methodology (Zavialov, 2009; Zavialov, 2010; Zavialov, 2012; Kisyov, 2013; Kisyov, 2014; Kisyov, 2019; Kisyov, 2020; Manzi, 2020; Slavchev, & Kisyov, 2016; Slavchev, & Kisyov, Slavchev, et al. 2017; Zavialov, & Konvalov, 2014). A total of 29 training schedules of highly qualified racers have been reviewed.

Results

Table 2 presents the average values of the weekly volume distance and denivelation of the basic non-running training tools from the second level in the researched training programs.

Table 2. Basic non-running training tools from the second level.

Weeks	Basic non-running tools for the sub-factors from the second level	
	Strength endurance	Speed-strength potential
	Minutes	Minutes
1	12	2
2	18	2
3	14	4
4	28	6
5	35	8
6	32	14
7	33	18
8	32	6
9	38	5
10	35	22
11	36	15
12	35	11
13	25	6
14	25	21
15	20	17
16	0	12
17	13	5
18	10	6
19	5	20
20	7	5
21	7	6
22	5	20
23	8	2
24	10	3
25	4	5
26	10	2
27	9	2
28	2	8
29	5	1
30	5	4
31	3	3
32	5	2
33	5	1
34	0	7
35	5	2
36	2	
37	5	1
38	5	
39	1	
40	4	
41	5	3
42	3	
43	5	
44	4	3
45	4	
46	5	
47	3	
48	5	1
49	3	
50	7	1
51	8	1
52	7	2
Total	612	285

Analysis of the basic non-running training tools for sub-factors from IInd level

Sub-factors from second-level „strength endurance” and „speed–strength potential” are developed with running and non-running training tools. The annual volume of the non-running tools for „strength endurance“ is 612 minutes, and for the sub-factor „speed-strength potential“ is 285 minutes. In Figure 2 the ratio in the tools can be seen: 68% for „strength endurance” to 32% for „speed – strength potential“. According to this data, the ratio between them is 2:1.

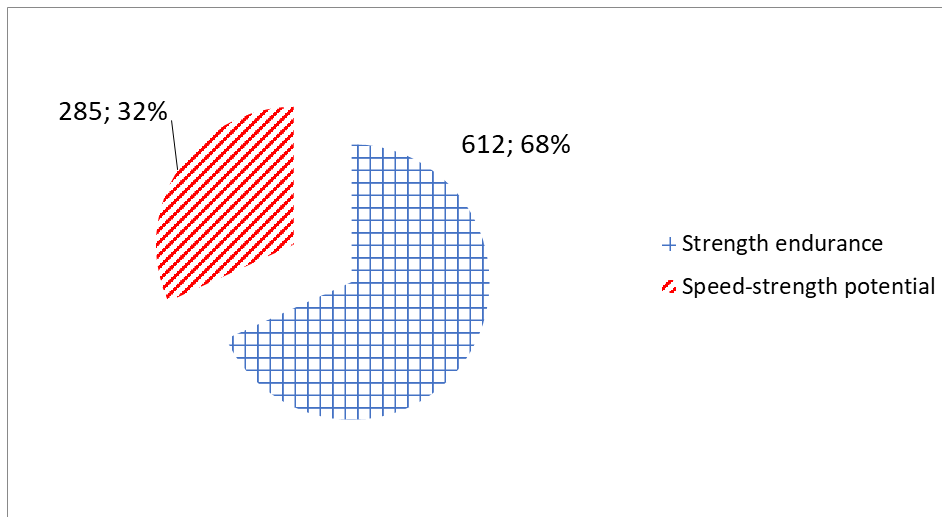


Figure 2. Annual volume of basic non-running tools for sub-factors from the second level.

Jumping workouts, strength complexes and exercises with weights are used for developing „strength endurance“ throughout the whole year. The total volume is 612 minutes (shown in Figure 2). It has the highest values in the general preparation stage and during the beginning of the special preparation stage. After that in the special preparation stage, their volume significantly decreases, and in the competition period, it has supporting strength endurance purpose (shown in Figure 3).

Speed-strength jumps and multi-jumps have a total volume of 285 minutes. They are included periodically in the training process in the middle of the special preparatory stage till the stage of the late competitions (shown in Figure 3).

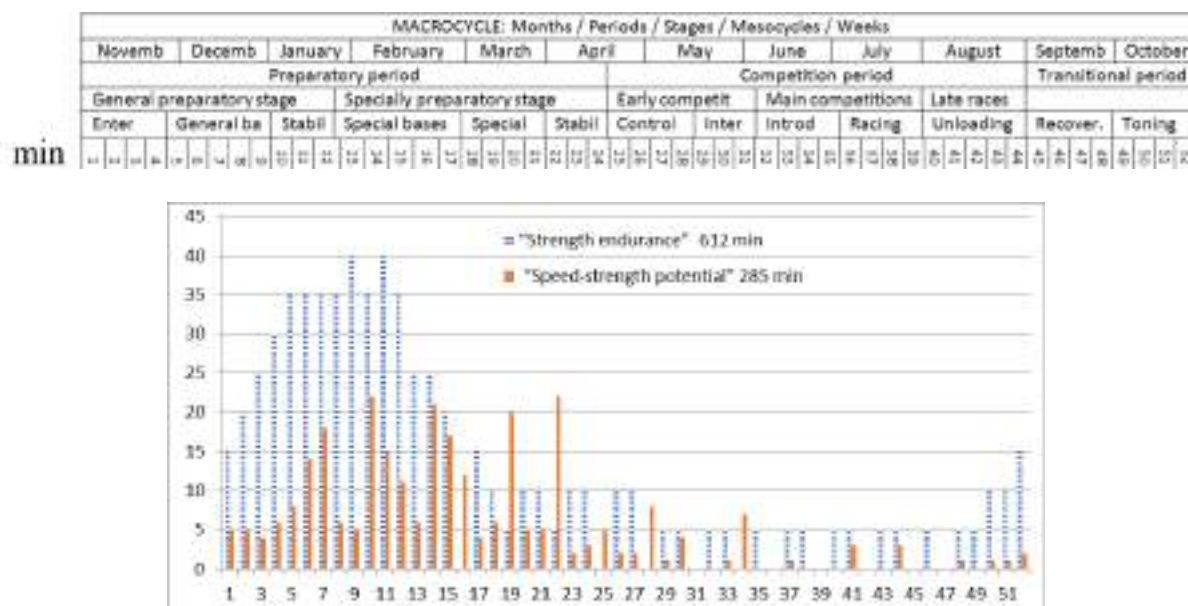


Figure 3. In the frame of macrocycle on the abscissa is shown the weekly distribution of the minutes of supporting non-running tools for sub-factors from the second level.

Conclusion

The training tools for developing „strength endurance” have been used throughout the whole year. They have the highest values in the general preparation stage and the beginning of the special preparation stage.

The training tools for developing of the sub-factor „speed-strength potential” are included periodically in the training process in the middle of the special preparatory stage till the stage of the late competitions.

The ratio of the volume of the training tools for developing the sub-factors „strength endurance“ and „speed-strength potential“ is close to 2:1.

References

- Belotti, V. (2010) *Training prior to winning silver at the World Mountain Running Championships (uphill only) in Kamnik, Slovenia*
<http://www.mountainrunning.net/training/Valentina%20Belotti%20training%202010.pdf> 2010 г.;
- Buchvarov, M. (2007) *Spetsializirano raznoobrazie v lekata atletika*. [Specialized Diversity in Athletics], Sofia;
- Buchvarov, M. (1982) *Raznoobrazie na spetsialnata trenirovka* [Variety of special training], Sofia: Medicine and Physical Education;
- Dematteis, M. (2011) *Training prior to winning bronze at the World Mountain Running Championships (up and down) in Tirana, Albania* 2011.;
- Doichev, B. (2022). Aktualni ekologichni problemi na sportnata deinost: Ekologichni problemi na planinskoto bqgane. Avangard Prima.
- Gasperi, M. (2007) *Training Prior to Winning the World Mountain Running Championships (up and down) in Ovronnaz, Switzerland* <http://www.mountainrunning.net/training/Marco%20De%20Gasperi%20training%202007.pdf>
- Harding, J. (2014) *Training For Mountain Running*, <http://www.mountainrunning.coolrunning.com.au>;
- Kisyov, K. (2022) *Byaganeto izvan patya (off-road running) kato chast ot lekata atletika*, [Off-road running as a part of track and field athletics] Journal of Athletics and Science, issue.1 (1), pp. 36-40
- Kisyov, K. (2020) *Poqva, razvvitie i harakteristika na planinskoto bqgane*. [Emergence, development and characteristics of the mountain running] Sofia. ISBN - 978-619-188-439-1
- Kisyov, K. (2019) *Bioenergetika na trenirovachnite sredstva v klasicheskoto planinsko byagane* [Bioenergetics of the training means in the classical mountain running] Journal of Athletics and Science, issue.1 (1), pp. 41- 46
- Kisyov, K. (2014) Criteria for categorization of mountain running courses. Athletics and Science, No. 1 (14).;
- Kisyov, K. (2013) Kinematic characteristics of the discipline mountain running depending on the different slopes of the course.- Athletics and Science Magazine, 1 (13), p. 113 - 119;
- Manzi, E. (2020) *Training Specific To Up And Down Mountain Races: Triangular Fartlek*
- Slavchev, A. Kisyov, K. (2016) Model of sports result in mountain running. Journal of Athletics and Science, No. 1 (16), p. 62-65 ISSN: 1310-3393;
- Slavchev, A., Kisyov, K., Slavchev, I. I., Simeonov, A., Radich, Z. (2017) *Classification of the training methods in mountain running*. Research in Physical education, Sport and Health, Vol. 6, No.1, pp.37-42 ISSN(Print):1857-8152; ISSN(Online):1857-8160
- Zavialov, K.V. Konovalov, V.N. (2014) *Variants of the organization of special training / Mountain running*. - M :, - № 1 (10) P.10-14
- Zavialov, K.V. (2012) *The structure and content of training microcycles of the stage of special training among highly qualified mountain runners*, Omsk Scientific Bulletin, No. 4 (111), p. 250
- Zavialov, K.V. (2010) *Features of the construction of the training process in mountain running*. "- Omsk Scientific Bulletin, No. 6 (92), p.182
- Zavialov, K.V. (2009) *Model characteristics of training mesocycles of athletes specializing in mountain running*, Omsk Scientific Bulletin, No. 6 (82), p. 163

