

Physical and Biomechanical Bases of Construction of a Training and Training Process When Preparing Wrestlers of the Greek-Roman Style

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Abstract: The article outlines the growing competition in the world in sports, especially in the Olympic types of programs, describes the fundamental importance of success in the sports arenas of the planet—the organization of educational and training and competitive process in Greco-Roman wrestling. The content of the weekly cycle of the training camp is presented. Individual cards for accounting the effectiveness of attacking and defensive technical and tactical actions in the ground have been developed and tested. Concrete conclusions are made and proposals are made to wrestling Federations and sports organizations.

Key words: Olympic Games, Greco-Roman wrestling, educational process, technical and tactical skill.

1. Introduction

With each Olympic cycle in the world's sports arenas, fierce competition for winning medals at the Olympic Games in all sports disciplines of the Olympic program is growing rapidly.

Along with the use of the most modern nano-technologies for training, pharmacological, biomedical support, the rational organization of the educational process plays the most decisive role.

Regarding Greco-Roman wrestling, it should be noted that the coaches of the former Soviet Union, representatives of the leading, advanced wrestling schools in the world, have dispersed to all continents

of the planet to work, and since the end of the twentieth century, competition in the international arena in each weight category has been increasing with rapid force. The geography of new countries cultivating Greco-Roman wrestling is expanding. For example, the Albanian wrestler Alice Guri in the light heavyweight category at the 2007 World Championships in Baku took fifth place, won an Olympic license, and demonstrated an aggressive, dynamic fighting style.

In accordance with the latest changes to the competition rules [1] approved by the FILA International Federation, no significant changes to the competition rules are foreseen. In this regard, it is fundamentally decisive in the new rules that the weight category competitions are held on the same day with a fight duration of up to 6 minutes and a fixed grip during the re-capture of the torso in the

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ground flight. To win a medal at the World Championships, it is necessary to conduct 5-6 intense fights with an interval of rest of up to 15 minutes, which makes high demands on the special endurance of a wrestler. The traditional use of intensive cross training as a means of developing special endurance in the process of training national teams of the Soviet Union, Russia, Turkey, Hungary, Kazakhstan and other countries did not bring the expected effect.

Due to the biomechanical basis of the movement of working muscle groups, the angle of flexion in the knee and hip joints during intensive cross-training is completely inadequate for the muscles involved in the development of technical mastery of the Greco-Roman style wrestler. In addition, the specificity of the respiratory system in wrestling, which requires delays, tightening breathing, fundamentally contradicts rhythmic breathing during cross-training. The main factor of fatigue in the fight is static stress.

At the same time, we consider it appropriate to use bulk cross-loads of low and medium intensity in groups of youth and junior contingents as a means of developing aerobic capabilities of a young organism.

The use of low-intensity cross-training for highly qualified wrestlers is advisable to use as a means of switching, recovering from injuries and during weight loss.

As a result of this, there was a long-term search for a new approach to solving the problem under consideration. Theoretically, the hypothesis put forward has been practically tested on national teams in the Greco-Roman wrestling of the USSR, Russia, Turkey, Kazakhstan and other countries and confirmed the correctness of this theory, the essence of which is as follows.

The greatest effect in increasing the level of speed-strength preparedness and special endurance is brought by the combined effect of volume, interval, serial, near-ultimate training loads with weights and volume, medium-intensive and near-ultimate loads for

special training, which helps to create the foundation for a more rapid growth of sportsmanship.

The above conclusions provided the basis for the withdrawal from the training process of high-intensity cross-training.

Based on these conclusions, the coaching council of the Greco-Roman wrestling team of the Republic of Belarus revised the planning and content of the weekly cycle of the training process [3, 4].

In order to implement this approach, two training camps were held for 16 days at the preparatory stage for successful adaptation to the competitive load [5-7]. The weekly cycle is traditionally divided into two micro-cycles: Monday, Tuesday, Wednesday—the first; Thursday, Friday, Saturday, Sunday—the second. Morning training (charging) is replaced by walking. The duration of the day training session on Monday is at least 2 hours (120 minutes). The first half of the lessons consisted of improving the technical and tactical skills in the stand with an emphasis on transfers to the stalls, passes on the torso, pushing the opponent behind the carpet and fighting in a tight grip (cross, hands from below and with the capture of hands and feet). Along with the General task, special emphasis was placed on individual performance of technical and tactical actions. The second half of the lessons was focused on the development of speed and strength qualities. Engaged are divided into four groups, four stations are defined with the subsequent transition and serial execution (three approaches with the implementation of the exercise to the limit). Selected special exercises develop those muscle groups that are fundamental in the performance of their crown techniques.

Research of the technical and tactical analysis of video records of duels of highly skilled wrestlers of the main starts of the last Olympic cycle and the received statistical materials testify that the outcome of a duel in 85.5 % of cases was defined at fight in orchestra seats [2]. Evening classes were focused on improving technical and tactical skills in the stalls.

Training bouts were divided into 12 periods of 1.5 minutes with alternately changing the top with the bottom, and in subsequent sessions—16 periods of 1.0 minute with a change of partners after two series. During the rest of both the morning and evening classes after the sixth period fortified tea was offered. The second half of classes ended with individual speed and strength training.

At the end of the General tasks, each athlete had the opportunity for individual work to improve technical and tactical skills and develop physical qualities [8].

Tuesday's afternoon session provided for fully individual improvement of technical and tactical skills and General physical and special training.

In the evening classes on Tuesday and Friday, video reviews of the world and European Championships were organized; a data bank was created for the world's leading wrestlers in each weight category. Strengths and weaknesses were identified. Study the Arsenal of their technical and tactical skills, tactics of combat, functional and psychological preparedness [9].

On Wednesday in the first half of the day are steam bath and massage. The second microcycle of the week (Thursday, Friday and Saturday) corresponded to the first with minor corrections of general and individual nature.

In Sunday in as a innovation for workings out before the next microcycle in evening time pursued a game in basketball (15 + 15), and also individual work on projectiles (swap) on desire.

For a more systematic, consistent training for each (main) member of the national team coach assigned, developed a map of individual technical and tactical training in the rack and stalls. Each athlete together with the head coach and the trainer responsible for his preparation fills in the individual card according to his technical and tactical skill, and also defined prospects of further development proceeding from his physiological-morphological, functional, coordination features.

Individual cards of the account of efficiency of attacking and protective technical and tactical actions in orchestra seats are developed and tested.

Determine the effectiveness ratio of attack on the ground (ERAG). To do this, the data of the number of technical and tactical actions (NTTA) multiplied by one hundred and divided by the results of the number of real attempts (NRA):

$$ERAG = \frac{NTTA \times 100}{NRA}$$

The coefficient of effectiveness of the attack in the stalls is advisable to display with each partner in training sessions and competitions.

To determine the effectiveness of protection in the stalls (EPS) should be the data of the number of reflected attempts (NoRA) multiplied by one hundred and divided by the data of the number of real attempts (NRA):

$$EPS = \frac{NoRA \times 100}{NRA}$$

At the final stages of preparation of the KEZvP it is essential to define in each training segment with different technical skills and put them in front of the main members of the national team, ideally bringing this indicator to one hundred percent execution. To account for the development and control of physical fitness, a map of individual physical fitness has been developed.

In all types of martial arts, the head coaches of national teams, the Research Institute of Physical Culture and Sports, the Republican Scientific and Practical Center for Orienteering and Selection, and the expert council express dissatisfaction with the decentralized training of leading athletes.

On the initiative of the NIN, scientific support groups were created for scientific and methodological support of national teams and leading athletes, for conducting phase and ongoing examinations during the period of decentralized training in the regions of

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the republic.

To streamline the accounting and control of the training process during home preparation, as well as for closer contact with personal trainers, individual exchange cards have been developed for each member of the national team of the Republic of Belarus on Greco-Roman wrestling for the time of decentralized training.

Exchange cards are filled in by the head coach responsible for the preparation of this athlete with the participation of the wrestler himself. In the card there is a task given for each day, taking into account the orientation of the load and methodological instructions for the sections of technical, tactical, physical and psychological training. The team doctor makes recommendations in a separate column.

The reports are filled in by the personal trainer responsible for training at the place of residence. The doctor of the regional physical dispensary, who oversees the team (athlete), makes notes on the treatment and preventive measures taken and the pharmacological preparations used. The reliability of the report is confirmed by the leaders of the local sports organization and regional scientific group.

Theoretical research, many years of practical experience of leading experts in the field of martial arts are entirely aimed at improving and streamlining the training process, resulting in the final useful result (the outcome of the competition).

Thus, the above material allows us to draw the following conclusion:

(1) Use the proposed methodology for planning the training process for responsible international starts;

(2) Introduce individual cards of technical and tactical skill, cards of the effectiveness of attacking and protective tactical and technical actions in the rack and stalls into the training process;

(3) Use exchange cards during decentralized training;

(4) Conduct a seminar with trainers of regional, republican, continental organizations on the development of the modern concept of improving the educational process;

(5) Continue research on the organization of the training and competitive process;

(6) Recommend the proposed methodology for use in an adapted form in the wrestling federation and sports schools;

(7) Issue a teaching aid on planning and improving the training process in accordance with the latest changes to the rules of the competition.

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