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SCIENTIFICALLY BASED METHODS OF THE TRAINING PROCESS IN THE TRAINING OF HIGHLY QUALIFIED ATHLETES

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Abstract:
The article summarizes scientifically based approaches to building the training process in Kazakh kuresi for highly qualified athletes. Based on UWW regulatory requirements and modern sports science data, the key components of training are systematized: periodization, development of specific performance (anaerobic power, strength endurance, explosive power), technical and tactical training, load and recovery monitoring (sRPE, heart rate/HRV), and individualization elements. A practice-oriented model of micro-meso-macrocycles for the stages of the preparatory and pre-competition periods is proposed, specifying control criteria and controlled load variables.

Keywords: Qazaq kuresi, periodization, load monitoring, sRPE, HRV, strength, anaerobic training, elite athletes, UWW.

Introduction

The development of highly skilled athletes in Kazakh kuresi requires reliance on evidence-based principles of sports training, as competitive effectiveness is determined by a combination of explosive efforts, strength endurance in the struggle for a grip and position, and the quality of throwing actions. UWW regulations for Qazaq kuresi emphasizes the importance of the dynamics and "quality" of technical action (including criteria related to speed/amplitude and control), which makes the training process dependent on the specific requirements of the rules and the model of the fight [1].

Modern sports science views combat sports training as a system in which the key is managing load and recovery throughout micro-, meso- , and macrocycles. For

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applied monitoring of internal training load, the session -RPE method is widely used, demonstrating its practical suitability and validity as a simple, non-invasive, and accessible monitoring tool in various sports [2]. In addition to subjective indicators, heart rate variability (HRV) monitoring is increasingly used as a marker of autonomic regulation and functional state, allowing for the assessment of adaptation to loads and signs of inadequate recovery in athletes.

The specific nature of martial arts lies in the high proportion of high-intensity actions with incomplete recovery, which requires targeted development of anaerobic power, strength training, and the ability to repeat intense episodes without critical loss of technique. Reviews of martial arts conditioning emphasize the need for programs that develop precisely these "high-intensity" qualities while simultaneously controlling the overall stress of training [3].

Therefore, a scientifically based training methodology in Kazakh kuresi for elite athletes should integrate: periodization and specialization of means for the structure of the fight and rules, strength and interval training with priority for specific qualities, systemic monitoring of load (sRPE) and recovery (HRV) for individualization and prevention of accumulated fatigue.

The scientific novelty of the study lies in the comprehensive justification of the training process in Kazakh kuresi for highly qualified athletes taking into account the regulatory requirements of the United World Wrestling and modern methods of monitoring load and recovery. For the first time, the use of periodization, specific strength training, and sRPE and HRV indicators for individualized training in this sport has been systematized.

Materials and methods of the study

The study was conducted in the format of an analytical review and methodological analysis aimed at substantiating the structure of the training process in Kazakh kuresi for highly qualified athletes. No experimental interventions were conducted; the work is theoretical and applied in nature and is aimed at synthesizing evidence from sports science with the regulatory requirements of the sport.

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The following materials were used in the research:
- official rules of the United World Wrestling (UWW) by Qazaq kuresi, which determine the structure of competitive activity and requirements for technical actions, serving as the basis for the selection of means and the direction of training [1];
- scientific publications devoted to monitoring training load using the session - RPE (sRPE) method as a valid indicator of internal load in athletes [2];
- studies on the use of heart rate variability (HRV) to assess recovery and adaptation to training loads in sports [4, 5];
- reviews and applied works on conditioning and strength training in martial arts, reflecting modern approaches to the development of special physical qualities in elite athletes [6].

The methodological basis of the study consisted of a content analysis of regulatory documents, which allowed for the identification of key competitively significant qualities, and a comparative analytical method applied to compare competition requirements with scientifically based principles of periodization and load control. The theoretical generalization of the data was carried out from the standpoint of modern sports training theory, which ensured the formation of a comprehensive methodological model for training highly qualified athletes in Kazakh kuresi.

Research Results

As a result of the analysis of Qazaq's regulatory requirements Based on the results of the study and data from modern sports science, key patterns in the construction of the training process for highly qualified athletes were identified, determining its effectiveness and manageability.

1. Competition specificity as a determinant of training structure. An analysis of the United rules World Wrestling in Qazaq Kuresi demonstrated that competitive success is largely determined by the quality of technical execution, particularly throws, which must be highly dynamic, have sufficient amplitude, and require control of the opponent after the technique is completed. These requirements objectively increase the role of explosive strength, speed-strength endurance, and

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coordination stability, necessitating the prioritization of specialized strength and interval training.

2. Focus of physical training of elite wrestlers. A comparison of regulatory requirements with scientific data on the training of high-level fighters shows that the training process in Kazakh kuresi should be built on a combination of three key components:

- special strength training (development of lower limb and body power);
- anaerobic interval work, simulating repeated episodes of contraction;
- maintenance aerobic exercise necessary for recovery and tolerance to the volume of training work.

At the same time, the share of general physical training in highly qualified athletes decreases as the competitive period approaches, giving way to special exercises and simulation of competitive situations.

3. The Role of Load and Recovery Monitoring. Results from studies analyzing training process control confirm that for elite wrestlers, load management, rather than maximizing it, is key. Using the session -RPE metric allows for quantitative assessment of the intrinsic load of training and the identification of periods of excessive strain. Supplementing subjective monitoring with heart rate variability (HRV) indicators improves the accuracy of assessing athletes' functional status and readiness for high-intensity work, which is especially important during intense competition and training cycles.

4. The structure of microcycles in the training of highly skilled athletes. Systematization of the data allowed us to determine the typical microcycle structure during the specialized preparatory period, which includes alternating high-intensity strength and sparring training with recovery and technical exercises. This structure promotes the development of specific qualities while simultaneously reducing the risk of chronic fatigue.

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Table 1 - The main components of the training process in Kazakh kuresi for highly qualified athletes

Preparation component	Main content	Target orientation
Special strength training	Explosive and speed-strength exercises, weight training, throwing combinations	Increased power and efficiency of throws
Anaerobic interval work	High intensity intervals, sparring, combat simulation	Development of special performance
Technical and tactical training	Practicing throws, grabs, transitions and control	Improving competitive technique
Aerobic and recovery exercise	Low-intensity cyclic work, mobilization	Maintaining recovery and resilience
Load and recovery monitoring	sRPE , HRV, subjective well-being	Individualization and prevention of overtraining

The obtained results show that a scientifically based training process in Kazakh kuresi for highly qualified athletes should be built as a dynamically controlled system in which regulatory requirements, physical training, and monitoring of functional state are integrated into a single methodological complex.

Discussion

The obtained results confirm that the effectiveness of the training process in Kazakh kuresi for highly qualified athletes is decisively determined by the compliance of the training structure with regulatory requirements and the model of competitive activity. Unlike universal wrestler training programs, which focus primarily on overall improvement of physical performance, in this type of wrestling, the priority is given to the dynamics of technical moves, explosive power, and the ability to maintain control in the final phases of a technique. This justifies the need for a targeted shift in emphasis from the volume of training to its specificity and quality.

From the perspective of modern sports training theory, the results are consistent with the concept of controlled periodization, according to which improvement in athletic performance is achieved not through a linear increase in load, but through a rational alternation of intense and restorative training. Using the session -RPE

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metric allows the coach to objectively assess the internal load, taking into account the individual athletes' responses to workouts with similar external parameters. The inclusion of heart rate variability monitoring complements this system, providing information on the state of autonomic regulation and recovery, which is especially relevant for highly skilled wrestlers with a busy competition schedule.

When discussing the structure of microcycles, it should be noted that the combination of special strength training, interval work and fight simulation reflects the real requirements of a fight in Kazakh kuresi. Moreover, the identified need for mandatory recovery days confirms research findings indicating a high risk of functional fatigue accumulation and technical deterioration with inadequate load management. Thus, recovery management becomes an essential component of the training process, not an auxiliary one.

From a practical perspective, the presented results highlight the limitations of directly transferring training methods from other types of wrestling without taking into account the specifics of the regulations and evaluation criteria. The scientifically based methodology should integrate special strength training equipment, anaerobic training and continuous monitoring of the functional state, which allows for the individualization of the training process and increases the stability of athletic form at the stage of high achievements.

Overall, the discussion of the results demonstrates that the effectiveness of training highly qualified athletes in Kazakh kuresi is achieved through the systematic interaction of regulatory requirements, evidence-based principles of sports training, and modern means of monitoring load and recovery, which creates the basis for further experimental research and improvement of training methods.

Conclusions

The study showed that the scientifically based training process in Kazakh kuresi for the preparation of highly qualified athletes should be built taking into account the specific regulatory requirements that prioritize dynamics, explosive power, and control when performing technical actions. Effective training is ensured by combining specialized strength and anaerobic interval work with technical and tactical training while maintaining recovery components. A key condition for the

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sustainable development of athletic performance is the manageability of the training load, achieved through the use of methods for monitoring internal load (session - RPE) and functional state (heart rate variability), which allows for individualization of the training process and reduces the risk of chronic fatigue. Overall, the integration of regulatory requirements, evidence-based principles of periodization, and modern control tools creates a methodological basis for improving the effectiveness of training elite athletes in Kazakh kuresi and the further development of this type of wrestling at the international level.

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