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PSYCHOLOGICAL FOUNDATIONS FOR DEVELOPING SPEED-STRENGTH QUALITIES AT THE STAGES OF SPORTS TRAINING IN 15–17-YEAR-OLD NATIONAL WRESTLING ATHLETES

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Abstract

The article investigates the effectiveness of an adaptive-digital model in developing speed-strength qualities in 15–16-year-old national wrestling athletes. Training loads were tailored to the athletes’ individual physical and psychological characteristics and monitored in real time. Results showed significant improvements in speed, strength, endurance, and coordination, as well as increased motivation and concentration. The model is recommended for use in school wrestling clubs.

Keywords: national wrestling, speed-strength qualities, adaptive-digital model, individual approach, psychological preparation, physical preparation, motor skills, competition performance, coordination, motivation, muscle strength, plyometric exercises, training effectiveness, periodization

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Introduction

In the Republic of Uzbekistan, the development of national sports and their promotion at the international level constitute one of the priority directions of state policy. In particular, the national sport of kurash occupies a special place as a sport that embodies the centuries-old historical heritage, national values, and patriotic spirit of the Uzbek people. Therefore, since the years of independence, considerable attention has been paid to the development of this sport, the improvement of its scientific and methodological foundations, and its popularization among young people.

At present, in the modern system of sports training, the development of speed-strength qualities plays an important role, especially among athletes aged 15–17. This age period is a crucial stage for the physical and psychological development of an athlete and is considered favorable for the formation of qualities such as speed, strength, and coordination. At the same time, psychological factors—such as motivation, volitional stability, stress resistance, and attention control—play a significant role in the effective development of speed-strength qualities.

Under the leadership of President Shavkat Mirziyoyev, a number of regulatory and legal documents have been adopted to support the development of national sports. In particular, the Resolution of June 2, 2017 (No. PQ-3031), "On Measures for the Further Development of the National Sport of Kurash in the Republic of Uzbekistan," became of great importance in bringing national kurash to a new stage of development. On the basis of this resolution, tasks were defined for the specialization of sports schools in the regions, as well as for improving the qualifications of coaches and referees [1].

The 2020 Resolution (No. RP-4881), "On Measures for the Development of the National Sport of Kurash and Further Enhancement of Its International Prestige," established measures to increase the number of specialized kurash schools and to systematically organize competitions [2].

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The 2024 Resolution (No. RP-450), "On Measures to Bring the Development and Popularization of the National Sport of Kurash to a New Stage," provides for the construction of new kurash schools in regional centers, Nukus, and Tashkent during 2023–2027, as well as the strengthening of their material and technical base [3].

Within the framework of these resolutions, international tournaments in national kurash have been traditionally held in our country.

Literature Review and Methods

The issue of developing speed-strength qualities in 15–17-year-old national kurash wrestlers is regarded as one of the important directions in modern sport. Scientific studies conducted in this area indicate that athletic performance is closely related not only to physical preparedness but also to psychological factors. Therefore, organizing the sports training process on the basis of an integrated approach is of particular importance.

The fundamental principles of sports training theory were developed by Lev Matveyev. In his scientific views, the interrelationship between training load and recovery, the gradual progression of training, and the systematic organization of the training process are theoretically substantiated. According to the author, an individualized approach and proper planning in the development of physical qualities contribute to the full realization of an athlete's functional potential [4].

The physiological and biomechanical foundations of speed-strength qualities are thoroughly examined in the studies of Vladimir Zatsiorsky. His scientific works analyze the mechanisms of explosive strength development, the characteristics of muscle fibers, and the specific features of neuromuscular system functioning. In particular, in kurash, the ability to demonstrate maximum strength within a short period of time is identified as a decisive factor [5].

Issues related to the long-term planning of sports training and the periodization of training loads are based on the theory developed by Tudor Bompa. According

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to his view, the gradual adjustment of training volume and intensity in accordance with athletes' age is an important factor in achieving high performance, particularly among adolescent athletes. The age period of 15–17 years is recognized as one of the most favorable stages for developing speed-strength qualities [6].

A comprehensive approach to the training of young athletes was substantiated by Vladimir Platonov. He emphasizes the need to take into account morpho-functional development processes in adolescent athletes. At the same time, it is noted that excessive training loads may have a negative impact on an athlete's health; therefore, selecting optimal load parameters is of great importance [7].

The influence of psychological factors on sports performance is widely discussed in the studies of Yuri Hanin. According to his theory, an athlete's emotional state, level of motivation, and pre-competition psychological readiness have a direct impact on performance outcomes. In sports that require speed-strength abilities, psychological stability and attention control are of particular importance [8].

Scientific and practical studies related to the national sport of kurash are also being conducted by scholars in Uzbekistan. In particular, research developments of the Uzbekistan State University of Physical Education and Sport have analyzed methods for developing speed-strength qualities in adolescent kurash wrestlers. The findings confirm the effectiveness of special exercises, plyometric means, and training sessions conducted under conditions close to competition [8].

The analysis of the above-mentioned scientific sources shows that the process of developing speed-strength qualities in 15–17-year-old national kurash wrestlers is multifactorial and is based on the integration of physical, physiological, and psychological components. Therefore, scientifically grounded planning of the training process, consideration of age-related characteristics, and the use of modern methodological approaches are important factors in achieving high sports performance.

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Research Methodology

This study was designed to determine the psychological and physical foundations for developing speed-strength qualities in 15–17-year-old school students engaged in the national sport of kurash. The research was conducted over a period of 12 weeks and involved a total of 48 students. The participants were divided into experimental and control groups according to their initial level of physical fitness, age, and psychophysiological indicators.

A distinctive feature of the study was that the development of speed-strength qualities during the training process was organized on the basis of an individualized approach. In this process, the athletes' psychological state, level of motivation, and functional capacities were taken into account in an integrated manner. The training load was gradually adjusted in accordance with the athletes' current condition.

The proposed methodology included the following main components:

1. Psychological monitoring and feedback system – the athletes' emotional state, level of attention, and motivation during the training process were regularly monitored, and the intensity of training sessions was adjusted according to the obtained results.
2. Differentiated testing system – a set of staged tests was used to assess speed, explosive strength, agility, and special endurance, allowing the individual development dynamics of each athlete to be identified.
3. Monitoring of functional indicators – the level of training load imposed on the athlete's body was evaluated through indicators such as heart rate, recovery time, and overall working capacity [12].
4. Adaptive load system – the volume and intensity of speed-strength exercises used in the training process were modified in accordance with the athletes' individual capacities, thereby preventing excessive strain.
5. Statistical analysis and evaluation of results – the research results were processed using mathematical and statistical methods. Mean values, variance, and

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reliability levels were determined, and differences between the experimental and control groups were analyzed.

This approach demonstrates that not only physical exercises but also psychological factors play an important role in the development of speed-strength qualities in athletes. The results of the study showed that the introduction of an individualized and psychologically oriented approach into the training process makes it possible to significantly improve the athletes' overall level of preparedness.

Experimental Results

At the end of the study, positive changes were observed in the experimental group of 15–16-year-old national kurash wrestlers not only in terms of speed-strength qualities but also in their level of psychological preparedness. The use of an individualized approach, methods aimed at increasing motivation, and psychological monitoring during the training process had a significant impact on the athletes' overall performance.

The following table presents the dynamics of changes in the main physical indicators:

Indicator	Initial	Final	Increase (%)
30 m sprint (speed)	4.8 s	4.1 s	15%
Vertical jump (strength)	42 sm	52 sm	24%
Special endurance (number of repetitions)	14 times	19 times	26%
Balance and coordination (s)	22 s	30 s	27%

Speed and Psychological Reaction

The improvement in the 30-meter sprint results indicates that the athletes developed not only physical speed but also psychological abilities such as rapid thinking, quick assessment of the situation, and decision-making. The methods used during training to enhance concentration and accelerate reaction played an important role in this process.

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Strength and Volitional Preparedness

The significant increase in vertical jump performance indicates the enhancement not only of the athletes' muscular strength but also of their volitional qualities, including determination, the ability to mobilize themselves, and strengthened intrinsic motivation. Elements of psychological support contributed to increasing the effectiveness of the training process.

Endurance and Mental Stability

The growth in endurance indicators shows an improvement not only in the athletes' physiological capacities but also in their mental endurance, stress tolerance, and ability to adapt to prolonged workloads. This provides an important advantage under competitive conditions.

Coordination and Psychomotor Development

The improvement in balance and coordination indicators demonstrates the development of athletes' psychomotor harmony, movement accuracy, and ability to control their bodies. These qualities are of great importance for the technically correct execution of kurash techniques.

Statistical analysis revealed that the changes in all indicators were significant ($p < 0.05$). At the same time, the results of psychological observation showed an increase in athletes' motivation, strengthened self-confidence, and a more stable interest in training sessions.

Overall, the results of the study confirm that taking psychological factors into account and organizing training sessions on the basis of an individualized approach lead to high effectiveness in the process of developing speed-strength qualities. This approach ensures the comprehensive development of athletes not only physically but also psychologically and contributes to achieving stable results in competitive activity.

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Picture 1

Discussion

The results of the study showed that training sessions organized on the basis of an individualized approach are highly effective in developing speed-strength qualities in 15–16-year-old national kurash wrestlers. Adapting the training load to the athletes' physical and psychological characteristics helped prevent excessive fatigue and ensured a stable improvement in performance outcomes.

Observations indicated that, along with improvements in speed, strength, and endurance indicators, the athletes' motivation, concentration, and self-confidence also increased. This confirms the important role of psychological factors in the training process.

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In addition, the development of balance and coordination demonstrated an improvement in the athletes' psychomotor preparedness. This is of particular importance for the accurate and effective execution of kurash techniques.

Overall, it was determined that organizing training sessions on the basis of individualized and psychologically oriented approaches is an effective method for developing speed-strength qualities in 15–16-year-old kurash wrestlers.

Conclusion

The study demonstrated that the adaptive-digital model effectively develops speed-strength qualities in 15–16-year-old national kurash wrestlers. The regulation of training loads with consideration of athletes' individual capacities and psychological preparedness helped prevent excessive fatigue and contributed to improved performance outcomes.

Significant improvements were observed in speed, strength, endurance, and coordination indicators, while motivation and concentration also increased. Therefore, the application of this model is recommended in school-based kurash clubs. It contributes to the comprehensive development of athletes' physical and psychological preparedness and provides opportunities to enhance sports performance.

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