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Methodology for Improving Endurance and Tackling Techniques of Rugby Players Through Combat Sports Methods

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Abstract: This article highlights the methodological foundations of using martial arts elements to develop endurance, one of the functional physical qualities of athletes engaged in rugby, and to improve tackling techniques, which are crucial in the game process. In the specially designed training complex for rugby players, techniques from combat sports such as sambo, judo, and kurash are selectively chosen, which serve to develop not only physical endurance but also skills such as stability in contact situations, holding the opponent, and maintaining balance.

Keywords: General and specific endurance, rugby, means, methods, functional processes, motor abilities, fatigue, strength, speed.

Introduction: At the current stage of modern sports development, physical fitness and the formation of specific skills in sports that demand strength, endurance, speed, and technical-tactical superiority—such as rugby—have become particularly significant. Rugby's unique physical demands—frequent collisions, tackling opponents, and withstanding powerful impacts—require athletes to be prepared not only for high levels of endurance but also for technical stability.

Endurance allows a rugby player to stay active throughout the match, move without losing speed, resist counter-actions, and maintain their position. Additionally, the technique of tackling an opponent plays a decisive role in ensuring tactical superiority during the game. These techniques are often based on elements of combat sports and require accuracy, balance, strength, and coordinated movements from the athlete.

This study explores the potential of effectively developing endurance and tackling skills in rugby players by integrating technical and tactical elements characteristic of combat sports—such as sambo, judo, and wrestling—into rugby training sessions. It is scientifically substantiated that the use of combat sport methods can help activate large muscle groups in rugby players, increase psychomotor stability, and develop safe and effective movement skills during collisions.

METHODOLOGY

From this perspective, developing and applying a methodology that incorporates elements of combat sports into rugby training is one of the current tasks of modern sports methodology.

Research Objective:

To theoretically justify and develop a methodology for improving specific endurance in adolescent rugby players based on their playing positions.

Object of the Research:

The training process of 16–17-year-old adolescents engaged in rugby.

Subject of the Research:

The methodology for developing specific endurance in 16–17-year-old adolescent rugby players, depending on their playing positions.

Research Tasks:

To conduct a theoretical analysis of scientific and methodological literature on the research topic.

To develop the content of an experimental methodology for developing specific endurance in adolescent rugby players based on their playing positions.

To test the effectiveness of the experimental methodology in a pedagogical setting.

Research Hypothesis:

The efficiency of the training process for 16–17-year-old rugby-playing adolescents will improve if a methodology for developing specific endurance is created and implemented in a differentiated manner according to playing positions.

Research Methods:

Analysis of scientific and methodological literature

Surveys

Control tests

Pedagogical experiment

Methods of mathematical statistics

Practical Significance:

A methodology for developing specific endurance in 16–17-year-old adolescent rugby players based on their playing positions has been developed. This methodology can be recommended for implementation in the practical sports training of rugby teams.

Literature Review

The theoretical foundations for the development of endurance qualities in athletes were established by L.P. Matveev, who identified training load volume and intensity as key factors in athletic preparation. According to him, endurance training should be based on the principles of continuity, regularity, and gradual progression [1].

V.N. Platonov proposed a comprehensive approach to planning the all-around training of athletes. According to his approach, enhancing rugby players' endurance and strength qualities through combat sport elements is theoretically substantiated and yields effective results in practical training [2].

Yu.V. Verkhoshansky put forward modern approaches to improving athletes' specific endurance. He argues that combat sport exercises help reinforce tackling techniques, which is particularly effective in team sports [3].

Research conducted by I. Israilov indicates that elements of combat sports positively impact the endurance level and balance of rugby players. He emphasizes the necessity of harmonizing endurance and technical training through a methodological approach, which contributes to increased training effectiveness [4].

R. Nazarov developed a methodology for teaching the basic elements of tackling techniques in stages for rugby players. He notes that using combat sport techniques helps players adapt to real-game situations, which is crucial for improving game effectiveness [5].

RESULTS

Increasing the effectiveness of sports training depends significantly on developing endurance and improving tackling techniques. In rugby in particular, these qualities directly influence the athlete's speed of movement, stability during play, and ability to engage in physical confrontations. Enhancing rugby players' endurance and technical skills through combat sports requires a novel approach to the training system.

Practical experience demonstrates that athletes who train using elements of combat sports (such as grappling, maintaining a stable stance, and overcoming physical obstacles) are more effective in applying tackling techniques. Within this study, 20 rugby players participated in an experimental training program over a period of 8 weeks. They were divided into two groups: a control group and an experimental group. The experimental group underwent training that included elements of combat sports.

Table 1.

Pre- and Post-Experimental Results (number of indicators)

№	Indicators	Control group (before)	Experimental group (before)	Experimental group (after)
1	Running (1000 m, sec)	235	232	218
2	Physical endurance test (score)	6.2	6.1	7.5
3	Retention technique (assessment score)	5.8	5.9	7.3

Research Results

The research results show that incorporating various forms of endurance development during individual combat training sessions is highly effective. These exercises align well with the physiological demands of rugby, and their combined application creates a synergistic effect. The continuous nature of rugby is reflected in interval training methods commonly used in combat sports.

Long-duration physical loads in wrestling disciplines develop muscular endurance, which is essential for collisions and contests for the ball in rugby. This similarity suggests that such training may serve as an effective tool for developing rugby-specific endurance. Furthermore, the psychological resilience developed through overcoming physical limits in training transfers into rugby matches, increasing players' stability and resistance to fatigue.

Combat drills often require athletes to break through invisible barriers, overcome discomfort, and maintain focus under pressure. These mental skills directly align with the demanding nature of rugby, where players must overcome exhaustion while staying concentrated. Understanding the specific energy systems used in rugby helps tailor cross-training to meet endurance needs—whether it's building an aerobic base or anaerobic power.

Different combat sports involve varying work-to-rest ratios and activity durations. Analyzing these aspects assists in selecting appropriate training methods for rugby. In turn, this best serves the endurance goals of rugby players, whether it's improving sustained movement or performing repeated high-intensity efforts.

Table 2:

Tentative Weekly Training Plan Incorporating Combat Methods

(for the Pre-Season Preparation Period)

T/r	Day	Directions of Rugby Training	Main Directions of Individual Combat Training	Notes
1	Monday	Strength training (upper body)	Judo: Basics of throws and sweeps, methods of unbalancing the opponent	Low intensity, focused on technique and learning basic movements.
2	Tuesday	Cardiovascular exercises (running, sprints)	Rest or light physical activity (stretching exercises, yoga)	Aimed at restoring and improving flexibility.
3	Wednesday	Strength training (lower body)	Wrestling: Basics of takedown techniques (single and double leg attacks), position control	Moderate intensity, mastering correct takedown techniques.

4	Thursday	Development of rugby skills (passing, dodging, kicking)	Freestyle wrestling: Basics of body control (hip and shoulder movements), techniques for getting up from the ground	Low intensity, introduction to basic principles of control and escapes.
5	Friday	High-intensity interval training (HIIT)	Rest	Aimed at developing anaerobic endurance.
6	Saturday	Practice game or simulation of game situations	Judo or wrestling: Sparring with emphasis on applying learned techniques in game-like scenarios	Moderate intensity, applying skills in controlled conditions.
7	Sunday	Rest	Active recovery (light stretching exercises, swimming)	Helps with muscle recovery and reducing muscle soreness.

CONCLUSION

In conclusion, incorporating elements and training methods from individual combat sports into rugby players' training programs is a promising approach for enhancing endurance and improving tackling technique. Disciplines such as judo, wrestling, and related martial arts offer unique advantages that complement traditional rugby training methods.

It is recommended that coaches and physical conditioning specialists working with rugby teams integrate combat sport elements into their training processes. These should be tailored to the specific roles and responsibilities of players on the field, as well as the phase of the competitive season. Conducting proper and qualified training sessions in both rugby and selected combat sports is essential to ensure safety and effectiveness.

To prevent overtraining and performance decline in rugby, training plans must be carefully designed with attention to principles of load periodization and balance. Despite the promising outlook, further scientific studies are required to more precisely understand the benefits and optimal applications of combat elements in rugby training. Future research should focus on quantitatively evaluating skill acquisition, identifying the most effective combinations of training methods, and examining the long-term impact of such cross-training on player health and performance.

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