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METHODOLOGICAL FOUNDATIONS OF USING THE “PILLA” DUMMY AND ITS EFFECTIVENESS IN DEVELOPING PHYSICAL QUALITIES

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ABOUT ARTICLE

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Abstract: The “PILLA” dummy is a special training device designed to simultaneously develop technical-tactical and physical preparedness among belt wrestlers. The primary goal of its creation is to provide athletes with the opportunity to learn and improve complex technical elements—particularly techniques of throwing an opponent over the chest or waist—under safe, controlled, and repeatable conditions. The dummy serves as an intermediate training tool in the preparatory phase, reducing injury risks, enhancing training efficiency, and ensuring qualitative automation of technical elements. Moreover, it facilitates repeated testing and refinement of technical-tactical strategies during the competition preparation stage.

Introduction. Belt wrestling is a complex sport requiring high levels of speed, strength, coordination, and endurance, where technical and physical preparedness are closely interconnected. Solely improving technique or only developing physical qualities cannot ensure stable performance growth. Therefore, during training sessions, it is essential to develop physical attributes such as strength, speed-strength, specific endurance, coordination, and psychological stability while performing technical elements.

The “PILLA” dummy allows integration of technical drills with physical loads, simulating competition-like conditions and contributing to an athlete’s overall preparedness. Training

using the dummy is based on the principle of progressive complication. Initially, technical elements are learned under simple, resistance-free, or minimal resistance conditions. In subsequent stages, resistance, speed, and coordination demands are gradually increased, allowing the athlete to first master precision, then stability, and finally the ability to execute at competition-level speed.

Development of Specific Physical Qualities

Specific endurance in belt wrestlers refers to the ability to maintain technical precision and efficiency during prolonged, high-intensity activity or matches. This quality significantly influences competition performance and can be effectively developed through targeted, progressive use of the “PILLA” dummy.

Speed-strength, defined as the ability to generate maximal force in minimal time, is one of the most crucial determinants of technical effectiveness and dominance over an opponent. Training that integrates “PILLA” dummy exercises enhances this ability by combining technical and strength-demanding drills.

Coordination skills enable wrestlers to execute precise movements and prevent injuries. These qualities are vital in complex throws, balance disruptions, and rapid directional changes. Training with the “PILLA” dummy significantly enhances these coordination-based attributes, improving overall technical performance.

Methodology

No	Methodological Approach	Description	Key Features	Methodological Recommendations
1	Short-series explosive power exercises	Exercises of explosive nature performed for 6–12 repetitions at maximal or submaximal intensity.	Improves muscle fiber contraction rate; develops explosive power required during the throw phase.	Perform quick throw series with the dummy, integrating short sprints and throw combinations. Each repetition must be technically accurate.
2	Integration of barbell, medicine ball, and plyometric exercises	Incorporation of weightlifting and plyometric drills into progressively	Harmonizes strength manifestation mechanisms with	<i>Barbell:</i> jump squats, snatch, clean and jerk, power clean. <i>Medicine ball:</i> throws upward, forward, and sideways. <i>Plyometrics:</i>

No	Methodological Approach	Description	Key Features	Methodological Recommendations
		complex dummy exercises.	technical movements.	box jumps, broad jumps, rotational jumps, etc.
3	Integration of movement speed and strength	Combine strength-demanding exercises with rapid movements.	Activates muscles maximally at impact moments, following the principle “from strength to speed.”	Perform a powerful entry movement with a heavy dummy or barbell, immediately followed by a fast throw using a lighter dummy to simulate competition conditions.

Methodological Approaches to Developing Coordination through the “PILLA” Dummy

No	Main Direction	Description	Key Features	Load Parameters	Evaluation Criteria
1	Activation of major and minor muscle groups	Exercises targeting abdominal, lumbar, and gluteal muscles.	Improves stability and reduces energy loss in the power transmission chain.	8–12 repetitions, 3–4 sets, 45–60 s rest, moderate intensity (Borg scale 6–7).	Duration of arm-supported stance (s), coordination test performance, quality of movement technique.
2	Control of movement direction and body center	Correctly managing the vector of motion and the center of gravity.	Ensures optimal force direction and correct angular adjustments.	5–8 repetitions per direction, 3 sets, 60–90 s rest, moderate-to-high intensity (Borg 7–8).	Accuracy of movement vector (degrees), displacement of body center (cm), match between force direction and throw execution.

No	Main Direction	Description	Key Features	Load Parameters	Evaluation Criteria
3	Balance and spatial coordination enhancement	Strengthening balance and spatial coordination to improve technical efficiency and prevent injuries.	Harmonizing movements in time and space.	10–15 repetitions, 3–5 sets, 45–60 s per exercise, moderate intensity (Borg 6–7).	Balance duration (s), spatial coordination test results (reaction speed, ms), percentage of balance maintenance on unstable surfaces (%).

Results and Discussion

No	Exercise Name	Objective	Execution Procedure	Load Regulation
1	Gripping and holding	Developing grip strength and finger endurance	Hold the dummy belt with both hands for 20–30 seconds, alternating hands.	4–6 repetitions, each hand 20–30 seconds.
2	Progressive balance disruption drills	Mastering techniques of shifting opponent's center of gravity	Hold the dummy belt, bend knees, shift torso sideways or forward to move the center of gravity.	3 sets of 8–10 repetitions.
3	Half-turn drills	Quick and precise transition to pre-throw position	Perform half-turns on one leg while maintaining body-leg coordination.	3 sets of 6–8 repetitions on each side.
4	Chest throw imitation	Safely practice chest throw technique	Pull the dummy toward the chest, rotate the torso, and push forward imitating a real throw.	4 sets of 5–6 repetitions.

No	Exercise Name	Objective	Execution Procedure	Load Regulation
5	Explosive throw drills	Develop speed-strength qualities	Execute quick and powerful throw motions with the dummy at maximal speed.	3–4 sets of 6–10 repetitions with 90 s rest.
6	Combination technical drills	Reinforce throws after various entries	Perform “feint entry,” main entry, and throw sequences from both sides.	3 sets of 4–6 repetitions.
7	Balance and coordination drills	Control body center during movement	Perform entry movements with the dummy while standing on unstable surfaces, maintaining balance for 8–10 s.	3 sets of 6–8 repetitions.

Complex of Exercises with the “PILLA” Dummy

The complex of exercises performed with the “PILLA” dummy aims to develop technical, physical, and psychological readiness simultaneously, providing belt wrestlers with a safe and effective training environment. The training process is built on the principle of gradual mastery of complex technical elements, such as chest and waist throws.

Each training session begins with general and specific warm-ups, followed by inspection of the dummy’s technical condition and ensuring training safety. Load volume increases progressively according to the athlete’s preparedness level, with strict rest intervals and attention to maintaining technical accuracy under fatigue.

Conclusion. The “PILLA” dummy significantly reduces the risk of injuries, optimizes training time, and allows precise management of training load volume. This tool provides an opportunity to integrate repetitive technical movements with the simultaneous development of speed-strength, specific endurance, and coordination.

During competition preparation, the “PILLA” dummy enables athletes to model various tactical scenarios, adapt to resistance levels, and enhance psychological readiness for competitive environments.

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