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The scientific and theoretical foundations for improving the pre-competition preparation of handball players.

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Annotation. This study examines the scientific and theoretical foundations of pre-competition training of young handball players. The research substantiates the necessity of комплексное (comprehensive) development of physical, technical, tactical, and psychological components of athletes' preparation. The content and directions of the training process, methods of developing physical and functional fitness, and methodological features of the initial training stage are analyzed. Special attention is given to the use of specialized exercises, scientific management of training load volume and intensity, and the implementation of feedback mechanisms through control tests. The results of the study contribute to optimizing the training process and improving the performance outcomes of young handball players.

Keywords: handball, pre-competition training, physical training, technical training, tactical training, psychological training, special exercises, young athletes, functional fitness, training process.

The pre-competition preparation of handball players is a systematic process aimed at the comprehensive development of the athlete's physical, technical, tactical, and psychological components. Studies conducted by F.A. Abduraxmanov, Sh.K. Pavlov, R.I. Azizova, T.E. Nabiyeu, Sh.F. To'laganov, A.Sh. Mo'minov, R.I. Isroilov, and X.Q. Fozilov show that in the long-term training system, the scientific management of special exercise complexes, training load volume and intensity, as well as the introduction of a feedback mechanism through control tests, is an important factor in improving athletes' competitive performance. The process of preparing young athletes for competitions requires a system of individual and group training sessions that take into account their physiological development characteristics and psychological state. Training sessions should be aimed not only at developing physical strength and endurance but also at improving rapid decision-making, anticipating the opponent's actions, and perfecting technical elements of the game.

The training process of young handball players is organized systematically in several directions. One of them is physical training, which is the most important factor determining the athlete's game performance. The main components of physical training are aimed at developing muscle strength, speed, endurance, explosive power, and flexibility, each of which enables the effective and safe execution of various movements during the game. Muscle strength increases the athlete's ability to perform passing, shooting, ball control, and defensive actions. Improved maximum strength and endurance of muscles allow the athlete to maintain stability in confrontation with an opponent and effectively perform tasks that require strength. At the same time, the development of muscle strength helps



reduce the risk of injuries and accelerates the recovery process. The speed component is aimed at increasing maximum movement speed over short distances, ensuring quick starts, passing and running, as well as rapid decision-making during defensive actions. By developing speed, the athlete performs movements within optimal time and effectively responds to the opponent's actions during the game. Endurance forms the athlete's ability to perform high-intensity activities over a long period. Aerobic endurance is necessary for running, maintaining game duration, and sustaining physical loads, while anaerobic endurance increases efficiency during short but intense actions such as quick starts and powerful shots. By developing endurance, young athletes distribute energy optimally during competitions and prevent rapid fatigue. Explosive power is aimed at generating maximum force in a short time and plays an important role in jumps, quick starts, shooting, and defensive actions. The development of explosive power enables the athlete to perform explosive and effective movements during the game while ensuring speed and accuracy in executing game strategies. Flexibility is aimed at increasing the range of motion of joints and muscles, ensuring correct and effective execution of technical movements, preventing injuries, and allowing quick adaptation to various game situations. By developing flexibility, the athlete performs complex technical elements effectively, maintains optimal body control, and adapts to different situations during the game.

Technical training is aimed at mastering movements such as ball handling, passing, shooting, and defense among young athletes. In the process of developing technique, individual exercises help to learn each element separately, pair exercises adapt technique to real game situations with two athletes, and team exercises serve to strengthen game combinations and tactical actions. Movement-based games teach young athletes to apply technical elements in game conditions, increase decision-making speed, and improve adaptation to real competition. Tactical training is aimed at developing team game strategies, anticipating the opponent's actions, and improving decision-making skills, while psychological training includes the development of attention, motivation, and resistance to stress. According to studies by leading foreign researchers C.J. Dillman, K.K. Ohnjec, H.I. Wagner, I.L. Iljana, H.C. Vila, A.A. Siddiq, and I.A. Yousef, the use of movement-based games and special technical exercises positively affects the strengthening of technical skills and adaptation to the game process in young athletes.

The physical and functional preparation of young handball players is a key factor determining their effectiveness in competitions. It is necessary to develop muscle strength, endurance, and speed through special exercises, as well as to improve the functional state of the cardiovascular and respiratory systems. The training methodology includes an individual approach, progression, and a feedback mechanism through control tests. Exercises adapted to each athlete's



characteristics, gradual increase in intensity, and optimization of training based on test results allow for effective management of young athletes' preparation.

The initial training stage is an important period that forms the foundation of young handball players' sports activity and is organized based on such didactic principles as correct execution of movements, systematic mastery of exercises, and the development of motivation and attention. At this stage, technical elements are taught step by step according to the principle from simple to complex, with particular attention paid to the biomechanically correct execution of each movement. This creates the necessary functional basis for the successful mastery of complex technical and tactical actions in later stages. Each technical element is studied separately, initially in static and simplified conditions, and later improved in dynamic and game-like situations. At the same time, physical training is carried out in close connection with technical and tactical exercises, ensuring the комплексное development of motor skills. During training sessions, exercises aimed at developing coordination, balance, speed, and movement accuracy are widely used, ensuring the harmonious formation of general and special preparation of young athletes. The development of motivation and attention is an important component of the initial stage, where game elements, competition-like exercises, and incentive methods are effectively used. Actively involving young athletes in the training process, increasing their interest in sports, and forming internal motivation play an important role in ensuring their long-term sports activity. Attention concentration and management skills are developed through special exercises and game situations, which improves athletes' ability to make quick and correct decisions during the game. At the same time, pedagogical control and regular analysis play an important role at the initial training stage. Various control tests, observations, and analytical methods are used to evaluate training effectiveness, and based on the obtained results, the training process is individualized. As a result, the technical, physical, and psychological preparation of young handball players develops step by step, creating a solid foundation for their successful transition to subsequent stages of sports development.

The complex of special exercises is aimed at the comprehensive development of the physical and functional preparedness of young handball players and includes rapid jumps, short-distance maximum-speed starts, and plyometric exercises to increase explosive power, movement-based games based on anticipating the opponent's actions to develop rapid decision-making, as well as dynamic and static stretching exercises to improve the flexibility of muscles and joints. Such a system of exercises forms the athlete's ability to quickly adapt to changing situations during the game and increases the accuracy and effectiveness of movements. Exercises aimed at developing explosive power improve the rapid contraction properties of muscles and activate the neuromuscular system, resulting in the athlete performing jumps, shots, and rapid changes of direction with high efficiency. Exercises that develop rapid decision-making enhance the activity of



the central nervous system, accelerate sensorimotor reactions, and enable optimal decisions to be made in a short time during the game. Exercises aimed at improving flexibility enhance the elastic properties of muscles and increase joint mobility, which is important for the correct execution of technical movements and injury prevention. Scientific studies show that planning special exercise complexes with consideration of individual characteristics, monitoring functional condition during training, and introducing feedback mechanisms through control tests serve to effectively manage athletes' preparedness. At the same time, the gradual complication of exercises, their approximation to game conditions, and the use of variability principles are considered important methodological approaches in optimizing the pre-competition preparation of young handball players. As a result, such a systematic approach allows for the harmonious development of not only physical qualities but also technical-tactical and psychological preparedness of athletes.

At the same time, the pre-competition preparation of handball players is a systematic process aimed at the comprehensive development of physical, technical, tactical, and psychological components, organized on the basis of an individual approach, a set of exercises, and scientific control. The training process serves to perfect technical elements, increase the speed of decision-making, and maximize game performance. A scientifically grounded training model improves the competitive results of young athletes, reduces the risk of injuries, and creates a solid foundation for their professional development.