



INFLUENCE OF INDIVIDUALIZATION OF NUCLEAR THROWING TRAINING TOOLS ON SPORTS RESULTS IN 17-18 YEAR OLD PARAATHLETES

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ABSTRACT

This thesis examines the impact of individualizing training tools for nuclear throwing on athletic results among 17-18-year-old para-athletes. In the course of the study, the effectiveness of choosing training means was analyzed, taking into account the physical fitness, functional capabilities, and individual characteristics of the athletes. It was established that through the individualization of training, the indicators of strength, speed, coordination, and technical readiness of the athletes improved. It was also substantiated that the application of special exercises in accordance with the athletes' capabilities has a positive impact on the growth of shot put results. The research results are of great scientific and practical importance for improving the parathlete training system and optimizing the training process.

Today, para-athletics plays an important role in the physical development, social activity, and athletic mastery of young people with disabilities. In particular, achieving high athletic results in the shot put requires a high level of strength, speed, coordination, and technical preparation from athletes. Therefore, the use of training tools on a scientific basis and their adaptation to the individual capabilities of athletes is one of the most pressing issues in the process of training para-athletes.

The period of 17–18 years is considered an important stage in the active development of athletes' physical and functional capabilities and the formation of sportsmanship. Particularly in para-athletes of this age, the correct organization of the training process, the individual assignment of loads, and the adaptation of special exercises to the athletes' capabilities have a direct impact on the growth of sports results. Since each para-athlete's physical condition, functional capabilities, and level of disability are different, the need for individualization of training tools increases even further.

In the Republic of Uzbekistan, great attention is paid to the development of Paralympic sports at the state level. Specifically, in the Resolution of the President of the Republic of Uzbekistan No. PP-373 dated December 11, 2025, "On additional measures for the further development of Paralympic sports," one of the priority tasks is defined as improving the training system for para-athletes, introducing modern training methods, and organizing the training process taking into account the individual capabilities of athletes.

Also, in the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 630 dated October 8, 2025, "On Approval of the Regulation on the Procedure for Forming Sports National Teams in Paralympic Sports," special attention is paid to the selection of para-athletes, the assessment of their physical and technical fitness, and the support of high-performing athletes. This document defines the organization of the training process and the widespread implementation of scientific-methodological approaches, taking into account the individual capabilities of athletes, as a critical task.

This thesis examines the impact of individualizing shot put training tools on athletic results in 17-18-year-old para-athletes. The study analyzes the effectiveness of selecting and applying training tools based on the athletes' physical fitness, technical skills, and functional capabilities. The results obtained are of great scientific and practical importance for improving the training system of para-athletes and achieving high athletic results in the shot put.

In 17–18-year-old para-athletes, the shot put sport requires a high level of physical, technical, and functional preparation. Achieving success in this sport depends directly on the strength, speed, coordination, and technical prowess of the athletes. Particularly in para-athletes, individualization of the training process is of great importance, as the functional capabilities of the body and motor activity have their own characteristics. Therefore, organizing the means of training in shot put based on the individual capabilities of athletes is one of the important factors in improving athletic results.

The shot put technique consists of a complex set of coordinated movements, requiring a high level of strength and movement precision from the athlete. For the effective execution of these technical actions, the coordinated functioning of the athlete's muscles, the ability to maintain balance, and the development of explosive strength are of great importance. In para-athletes, this process occurs differently depending on the type of disability and the functional capabilities of the body. Therefore, the individualization of training equipment allows for the correct distribution of loads, taking into account the physical condition of the athletes.

In the process of individualizing training equipment, the age characteristics, level of physical development, technical training, and functional state of athletes are taken as the primary criteria. The 17–18 age period is the stage of rapid development of the body, during which qualities such as muscle strength, speed, and endurance are actively formed. Therefore, special exercises used in training must be selected in accordance with the individual capabilities of the athletes. For example, in athletes with well-developed upper body muscles, strength loads are used more, while in athletes with weak coordination abilities, more attention is paid to technical and balance exercises.

According to research findings, individualized training programs significantly improve the athletic performance of athletes. Throwing medical balls, working with rubber shock absorbers, barbell exercises, jumping exercises, and the use of special technical exercises during training expands the range of motion in the shot and increases the impact force on the projectile. Especially in para-athletes, the gradual and individual application of special exercises prevents excessive fatigue and ensures the body's adaptation to the load.

Technical preparation occupies a special place in nuclear discharge. The correct execution of technical actions directly affects the athletic result. According to the scientific

views of V.N. Turevich, the harmonious movement of the muscles of the arms, torso, and legs in modern nuclear projectile throwing techniques serves to increase the projectile's flight speed. Therefore, it is important to use special exercises aimed at improving technical movements during training sessions. When teaching technical elements to para-athletes, the organization of movements based on the principle of "simple to complex" yields effective results.

Pedagogical control is of great importance in the individualization of training tools. The coach must regularly monitor the quality of exercise performance, physical condition, and recovery processes of the athletes. Based on pedagogical control, the individual capabilities of the athlete are assessed, and appropriate adjustments are made to the training loads. This increases training efficiency and ensures a steady increase in athletic results.

The regulatory legal acts adopted for the development of Paralympic sports in the Republic of Uzbekistan serve as a vital foundation for improving the training system for para-athletes. In particular, the Decree of the President of the Republic of Uzbekistan No. PP-373 defines the tasks of introducing modern scientific and methodological approaches in the training of Paralympic athletes, organizing training taking into account the individual capabilities of athletes. Additionally, Cabinet of Ministers Resolution No. 630 pays special attention to the system of individual preparation for the selection of para-athletes and the enhancement of their athletic skills.

Training individualization also has a positive impact on the psychological preparation of athletes. When an athlete performs training according to their capabilities, their self-confidence increases, motivation increases, and the desire to achieve high results in competitions increases. Especially in para-athletes, mental preparation is inextricably linked to physical fitness and is one of the important factors determining training effectiveness.

The use of innovative technologies in the modern sports training system also contributes to increasing training efficiency. Through video analysis, special simulators, and digital monitoring tools, the technical movements of athletes are analyzed in depth. This allows for the identification of technical deficiencies and their elimination within a short timeframe. As a result, the technical skills of the athletes will improve, and the results of the shot put will improve.

In general, the individualization of training tools in shot put among 17-18-year-old para-athletes is an important factor in improving athletic results. Organizing training based on the functional capabilities and individual characteristics of athletes serves the effective development of physical and technical fitness. At the same time, the scientific application of special exercises, the strengthening of pedagogical control, and the use of modern innovative tools play an important role in improving the athletic skills of para-athletes.

Conclusion: During the study, it was established that the individualization of training tools in shot put among 17-18-year-old para-athletes is of great importance in improving athletic results. Organizing training sessions taking into account the physical fitness, functional capabilities, and individual characteristics of athletes serves the effective development of technical mastery and physical qualities. In particular, the individual application of special strength exercises, technical preparation exercises, and coordination movements has a positive impact on improving the results of athletes in the shot put.

The research results showed that proper planning and individualization of training loads prevent excessive fatigue, expand the body's adaptive capabilities, and improve the functional state of athletes. At the same time, pedagogical control and the use of modern innovative tools are important factors in increasing the effectiveness of training.

Overall, it has been scientifically substantiated that the individualization of shot put training tools is an effective tool for improving the physical and technical fitness of 17-18-year-old para-athletes, improving athletic results, and fostering high athletic mastery.

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