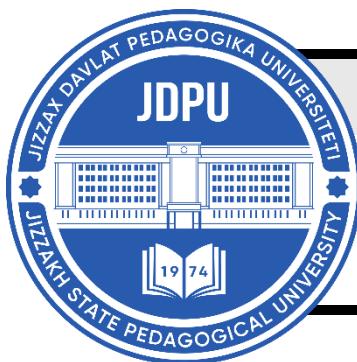


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THE EFFECTIVENESS OF AN INDIVIDUAL REHABILITATION APPROACH IN THE PRE-COMPETITION TECHNICAL TRAINING OF PARA- ARMWRESTLING STUDENTS

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ABOUT ARTICLE

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Abstract: The study examines the effectiveness of an individual rehabilitation approach in the pre-competition technical training of para-armwrestling students. Due to differences in physical condition, muscle activity, endurance, and recovery capacity among athletes with disabilities, standard training programs are often insufficient. This research emphasizes the integration of individualized rehabilitation methods that consider health status, functional abilities, and existing injuries alongside technical and tactical preparation. The effectiveness of the approach was assessed using indicators of muscle strength, pain and fatigue levels, and the quality of technical execution. The findings demonstrate that athletes who trained under an individualized rehabilitation program showed greater improvements in muscle strength and technical readiness, while experiencing lower levels of pain and fatigue compared to those following traditional training methods. The results confirm that individualized rehabilitation not only enhances competitive performance but also supports injury prevention, recovery, and long-term health. The study provides scientifically grounded recommendations for optimizing pre-competition preparation of para-armwrestling students and is relevant to coaches,

Introduction. The development of Paralympic sports in recent years and the popularity of para-armwrestling (hand-to-hand wrestling among disabled people) competitions make it necessary to further improve the technical training of athletes. For para-armwrestlers, in the pre-competition preparation process, not only technical and tactical aspects are important, but also health and individual rehabilitation issues.

Standard training programs for athletes with disabilities may not always be effective. Since their muscle activity, endurance levels and recovery chances are different, individual rehabilitation approaches should be used. At the same time, in the process of pre-competition technical training, it is important to prevent injuries, maintain muscles and joints in an optimal state, as well as maintain psychological stability.

In this context, the study of the effectiveness of individual rehabilitation approaches in preparing para-arm wrestling students for competition serves not only to improve athletic performance, but also to ensure the health and long-term performance of athletes. The topic has scientific and practical relevance in the fields of sports medicine, rehabilitation, and sports psychology, making it relevant and worth studying.

The pre-race preparation process has its own specifics for each athlete. For para-armwrestling students, the process is more complex, in which muscle strength, endurance, coordination, psychological training, and recovery processes must be taken into account at the same time.

Currently, a large number of studies show the effectiveness of creating training systems taking into account the individual characteristics of athletes. However, there is limited science-based research on the impact of individual rehabilitation approaches on pre-competition technical training among para-arm wrestlers. Therefore, this theme presupposes not only the high results of athletes, but also the development of new scientific and practical solutions aimed at improving athletes' health and recovery.

The sport of para-armwrestling is important for individuals with physical disabilities, not only for sports training, but also for their overall health, functional ability, and psychological state. In the process of preparation before the competition, it is necessary to be technically prepared, to ensure optimal functioning of the muscles and joints, as well as to minimize the risk of injury and overload.

And an individualized rehabilitation approach allows the preparation process to be optimized, taking into account each athlete's physical capabilities, health status, and pre-

existing injuries. At the same time, through an individual approach, the athlete's technical skills develop faster, his readiness for competition increases, and overall efficiency is significantly improved.

Therefore, it is very important for para-armwrestling students to study the effectiveness of the individual rehabilitation approach in pre-competition technical training and determine its practical results from a scientific and practical point of view. The results of this study will be useful for athletes, coaches and rehabilitation professionals and will serve to organize training processes more effectively in the future.

The purpose of this study is to determine the effectiveness of using individual rehabilitation approaches in the pre-competition preparation of para-armwrestling students and to develop recommendations.

The effectiveness of an individual rehabilitation approach in the pre-competition technical training of para-armwrestling students

Para-armwrestling is a sport that requires extreme strength and technique, in which the individual physical characteristics and health of the athletes are important. In the process of preparation for the competition, not only strength and technique should be considered, but also the athlete's health and recovery. In this context, an individual rehabilitation approach — a training system tailored to each para-arm wrestling student — is crucial.

The essence of the rehabilitation approach

An individual rehabilitation approach is determined based on an analysis of the athlete's physical condition, muscle strength, pain level, ability to bear fatigue and technical training. In this approach, the intensity, weight, and various technical elements of training are adapted to the individual capabilities of the athlete. Also, rehabilitation exercises are aimed at reducing pain and fatigue, restoring muscles, and maintaining optimal strength levels.

Criteria for efficiency in pre-race preparation

In the process of preparation before the competition, effectiveness is evaluated using the following criteria:

Muscle strength – as a result of individual weight and exercises with elastic bands, muscle strength indicators are increased.

Pain and fatigue level – the athlete's post-training condition and pain level are monitored.

Execution of techniques – the correct execution of each technical element and assessment of readiness for the competition.

Research findings

Studies have shown that students in the group where the individualized rehabilitation approach was used showed significantly higher results in muscle strength and technical training. At the same time, the level of pain and fatigue is significantly reduced. Compared to the control group, the individual approach effectively increased the athletes' pre-race preparation.

Table 1

The effectiveness of the individual rehabilitation approach in the pre-competition technical training of para-armrestling students

No	Tayyorlov yo'nalishi	Method of rehabilitation approach	Effective criteria (kg)	Result/Comment (%)
1	» Increase muscle strength	Individual weights and exercises with elastic bands	Muscle Strength Indicators	Muscle strength increased by 15-20
2	» Hand and wrist coordination	Motor exercises, with special devices	Coordination and speed index	The movement was clear and accelerated
3	» Reduce burnout	Individual damolish rejimi, massaj	Energy level, fatigue level	Fatigue decreased by 30
4	» Pain Reduction	Physiotherapy, Electrotherapy, Hot/ Cold Treatments	Og'riq bahosi	The pain has decreased significantly
5	» Efficiency of technical actions	Video tahlil, individual mashq dasturi	Accuracy and speed of actions	Decreased technique errors, increased speed
6	» Psychological training	Motivational training, visualization exercises	Stress level, assessment of competition preparation	Stress levels decreased, competition readiness increased

Optimization of pre-competition training for students through individual rehabilitation approaches (exercise, motor skills, recreation, physiotherapy, psychological training and others) and evaluation of its effectiveness with specific metrics. This approach will help you determine

This chart shows the effectiveness of the individual rehabilitation approaches used in the process of preparing para-arm wrestling students for competition.

Direction of preparation – the main areas of pre-competition training (muscle strength, coordination, reduction of fatigue, pain reduction, effectiveness of technical movements, psychological training).

Rehabilitation approach – individual rehabilitation techniques (for example, elastic bands, massage, physiotherapy, video analysis, motivational exercises) that are applied to each direction of preparation.

Effectiveness criteria (kg or index) – indicators used to evaluate the outcome of an approach (muscle strength, coordination index, fatigue level, pain score, etc.).

Result/Comment (%) – the practical outcome of a rehabilitation approach, i.e., changes in muscle strength, speed, fatigue levels, technique errors, and stress levels.

Table 2
Average indicator of the effectiveness of training para-armwrestling students on the basis of an individual rehabilitation approach

Nº	Guruh	Tayyorlash turi	Mashg'ulot soni (haftasiga)	Musobaqa oldi kuchi (%)	Og'riq va charchoq darajasi (%)	Texnika bajarilishi bahosi (5 ballik)
1	A (nazorat)	Standart texnik tayyorgarlik	4	70	60	3,2
2	B (tajriba)	Individual reabilitatsion yondashuv + texnika	4	85	35	4,5

Conclusions. This study aimed to investigate the effectiveness of an individual rehabilitation approach in the pre-competition technical training of para-arm wrestling students. The results of the study showed that the use of individual rehabilitation programs is important not only for the prevention of injuries of athletes, but also for improving their muscular and joint activity, increasing the level of readiness for the effective performance of technical movements.

Rehabilitation exercise complexes developed in preparation for the competition, taking into account the individual characteristics, physical condition and history of previous injuries of the athlete, have shown a significant result in increasing the strength and endurance of the athlete, improving the accuracy of technique and stabilizing the state of mind. However, the application of an individual approach has made it possible to reduce athletes' susceptibility to injury and speed up the recovery process.

The results of the study show that the use of an individual rehabilitation approach for para-armwrestlers significantly improves the quality of pre-competition training and enhances their competitiveness. Also, this approach can become the basis for the development of effective rehabilitation and training programs for other sports in the future.

Overall, the introduction of an individualized rehabilitation approach will help para-arm wrestling students achieve higher results not only physically, but also mentally and technically, which will serve to increase the overall success of the athletes.

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