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Methods Of Conducting Training On The Russian Bench With Novice Disabled Athletes With Cerebral Palsy.

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ABSTRACT

An assessment of the motives and requirements of athletes with disabilities with cerebral palsy to the training process on the Russian bench. The initial level of their physical development, functional state and physical fitness was clarified. The obtained data served as guidelines for the creation of a sports training method in the preparatory period of athletes with cerebral palsy in the Russian bench press. The developed methodology was based on verified characteristics of this contingent of persons with disabilities. With this in mind, the individual exercises included in it and thematic blocks of physical exercises with metered load and rest parameters were developed, which made up the integral structure of microcycles for training on the Russian bench press, based on measured didactic support. During the design and approbation of the experimental training methodology, methodological recommendations were formulated that take into account the specificity of the organism of persons with cerebral palsy, thereby causing a high efficiency of the training process during the preparatory period. The analysis of scientific and methodological information and data from our own research suggests the effectiveness of the method of training for the Russian bench among people with cerebral palsy and increasing their level of physical development in the preparatory period.

Keywords: methods, athletes, people with disabilities, cerebral palsy, Russian bench, training process.

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INTRODUCTION

Disturbances in the functioning of various body systems often lead to serious dysfunctions, sometimes leading to severe maladaptation [1-5]. Very often, such violations cause persistent disability [6-10].

According to statistics, the number of people who have been assigned a degree of disability in Russia is more than 12.8 million people. This is 9.2% of the total population of the country, of which there are more than 143 million people. Unfortunately, every year there are more and more disabled people in the country. Their number is gradually increasing, which indicates a very negative processes in the health of society [11]. Due to the growing number of people with disabilities, the role of state, public, social and other institutions that provide the living conditions of people with disabilities increases [12-16]. Adaptive physical culture and sports are very significant for the social adaptation and integration of people with disabilities into various spheres of social life [17-19]. Among disabled people, there are European and World Championships in various sports, Paralympic Games [20,21]. Today, the achievements of athletes with disabilities sometimes approach the Olympic records [22,23]. Adaptive physical culture and sports are a powerful tool for social adaptation and rehabilitation of people with disabilities [24,25]. Therefore, it is necessary to look for new means and methods for improving the training process [26,27].

One of the new forms of involving people with disabilities in physical exercise and sports, their social adaptation and improvement of sports skills has become the most popular sport in Russia - the Russian bench [28-31]. It represents the raising of a bar of a certain weight, in accordance with the established rules, the maximum number of repetitions and without the use of various "bench" shirts [32-35].

For people with disabilities with a lesion of the musculoskeletal system, there are several variants of competitive versions in the Russian press [32,36,37]:

- "damn dozen" - the participants alternately perform three test approaches to weight, which is determined independently. The score is the result of at least eight and no more than thirteen repetitions. The participant has the right to keep the weight of the previous approach in each next approach or to change it in any (both upwards and downwards). The results are summarized by the coefficient of athleticism, which is calculated by dividing the total tonnage of all three approaches, by the participant's own weight;

- "Press Marathon" - participants perform three test approaches to a fixed weight of the nomination, which they choose independently. The score is the result of at least eight repetitions in each approach. The results are summarized by the coefficient of athleticism, which is calculated by dividing the total tonnage of all three approaches, by the participant's own weight. In the case of equal odds, the athlete wins the increase in tonnage;

- "Classic Russian bench press", each man has the right to choose a fixed bar weight: 35 kg, 55 kg, 75 kg. Women have a bar weight of 25 kg and 35 kg.

With cerebral palsy, bench press has the potential to effectively restore impaired functions and as a symmetrical cyclic motor action, performed in a horizontal position with a maximum area of support, and as a power sport. The horizontal position and the maximum bearing area ensure the minimal influence of the gravitational force on the body, reducing spasticity and relieving the spine. Symmetry and one-cycle movement exclude the possibility of fixing perverse motor connections and stereotypes. Stimulated development of muscular strength leads to the following functional changes: the excitability of the neuromuscular apparatus increases, the intramuscular coordination increases, and the coordination of movements improves [38,39].

Such a sport as a Russian press is an accessible form of physical exercise for people with disabilities with a lesion of the musculoskeletal system. However, in the practice of physical training of disabled athletes, not enough attention is paid to using the bench press, there are no training methods for the Russian bench press. In this regard, the goal was set in the work: to develop a methodology for training on the Russian bench, adapted for disabled people with cerebral palsy.

MATERIALS AND METHODS

At the first stage of the study, there were: a survey of 28 teachers working in the system of adaptive physical education, as well as a survey and examination of 34 disabled people with the disease cerebral palsy aged 25 to 30 years old, engaged in sports activities in sports clubs for disabled people in the Ivanovo region.

The motives and requirements of athletes with disabilities with cerebral palsy to the training process for the Russian bench press were found out. The initial level of their physical development, functional state and physical fitness was assessed. The obtained data served as guidelines for the creation of a sports training method in the preparatory period of athletes with cerebral palsy in the Russian bench press.

At the second stage, the specified training method was built: physical exercises adequate for the characteristics of the test subject, volume and intensity of physical activity, training tools and methods, visibility, communication and interaction between teachers and students were developed, specific training plans and microcycles were developed.

The third stage was devoted to the pedagogical experiment, the purpose of which was to assess the effectiveness of the proposed training process for athletes with cerebral palsy in the Russian bench press.

RESULTS AND ITS DISCUSSION

The results of the research allowed us to: develop a methodology for sports training in the preparatory period for athletes with disabilities with cerebral palsy, which is based on voluntary systematic physical exercises that ensure the maintenance and improvement of health, a real way to self-assertion, social adaptation and integration into society, new impressions, correction physique and maintaining a healthy lifestyle.

It was possible to assert that the methodology of the training process for the Russian press of athletes with cerebral palsy becomes effective if the requirements of athletes with disabilities are met for the availability of: necessary infrastructure, material and technical support, special programs (techniques) and the mandatory use of an individual approach to athletes with regard to their nosology [40,41,42].

It was found that the training process of disabled people with cerebral palsy becomes an effective method if it:

1) designed based on a genetic approach, an anthropological approach, a systematic approach, a personal activity approach, a prognostic approach, a normative-oriented approach;

2) is based on the general principles of adaptive physical culture [32], general (universal) and special principles of managing the development of adaptive sports: systematic; optimality and efficiency; scientific validity and adequacy; combinations in the management of public and state interests and the interests and needs of persons with disabilities; rational centralization; management regulations; feedback; humanization; state support [43]; the main provisions of the concept of managing the development of adaptive sports in Russia; methodological principles of building sports training [44,45].

3) are realized through the individualization of the content, forms, means and methods of achieving and improving somatic and mental health and physical capacity, are built taking into account the features of the functional state, physical fitness, physique, health level (including nosology, degree of pathology and the nature of other diseases), intellectual and personality-psychological characteristics, as well as the needs and individual inclinations involved [46-50]. Structural bases of the methodology are scientifically based and adequate characteristics of the contingent of students, separate physical exercises and thematic blocks of physical exercises with their inherent load and rest parameters, structural blocks of one lesson, holistic classes, microcycles of training on the Russian bench press, and their didactic support.

To illustrate these provisions, we consider the weekly microcycle scheme (Table 1) and reveal the structure and content of one workout on the Russian bench press of athletes with cerebral palsy among men 25-30 years old (weight category, up to 90 kg).

This training consists of 4 parts: preparatory (25 min), including general developmental exercises, warm-up exercises, including exercises on simulators; the main (75 min), consisting of 3 blocks of strength exercises with a barbell:

- 1) barbell weight equal to 65% of its own weight, 2 sets of 10 times;
- 2) barbell weight equal to 67% of its own weight, 3 sets of 8 times;
- 3) weight of the bar, equal to 68% of its own weight, 3 sets of 6 times;
- 4) a hitch, including training (the bar does not fall to the chest) with a weight of 70-80% of the maximum weight in training from 3 to 5 repetitions; final (20 min), including breathing exercises and stretching exercises. The choice of the percentage of the weight of the bar to its own weight is explained by the maximum weight of the competitive nomination for this weight category of the athlete (75 kg).

In the weekly micro-cycle workout, in addition to the first day of strength training presented, two more strength exercises are conducted. At the second training session, the weight of the barbell is reduced to 45 kg (the minimum weight of the competitive nomination), and the number of exercises is carried out until the athlete refuses. At the third training session, the exercises are performed with a barbell weight of less than its own weight in three stages with three approaches and three numbers of repetitions. At the first stage, the weight of the bar is equal to 70% of its own weight, at the second - equal to 72% of its own weight, at the third - equal to 73% of its own weight.

Table 1. The structure and maintenance of a sports microcycle for the Russian press of disabled athletes with cerebral palsy (men 25-30 years old, weight category up to 90 kg)

Monday	Tuesday	Wednesday	Thursday	Friday
In the gym weightlifting. Preparatory part: general developmental exercises, warm-up exercises, exercise equipment Main part: (work with a bar) 1) 70 kg, 2 sets, 10 times; 2) 72.5 kg, 3 sets, 8 times, 3) 75 kg, 3 sets, 6 times 4) hitch: the booster is used (the bar does not fall to the chest), weighing 70-80% of the maximum workout weight from 3 to 5 reps. The final part: stretching exercises	General physical preparation, table tennis	In the gym weightlifting. Preparatory part: general developmental exercises warm-up exercises simulators. Main part: (work with a bar, classic) 45 kg, 3 sets, is performed until the athlete fails to perform the motor action, using the slow lowering of the barbell. Weight alternates in a week 55 kg. The final part: stretching exercises	General physical training, Darts	In the gym weightlifting. Preparatory part: general developmental exercises warm-up exercises exercise machines Main part: (work with a bar, big weights) 1) 77 kg, 3 sets, 3 times; 2) 80 kg, 3 sets, 2 times; 3) 82 kg, 3 sets, 1 time 4) hitch: holding the bar, 100 kg (increasing the weight of the bar + 5 kg) The final part: stretching exercises

At the end of a study on the effectiveness of the proposed method of sports training in the preparatory period, the body weight of the subjects increased on average by 2.61 kg ($p < 0.05$) due to an increase in muscle mass.

Trainees had significantly improved somatic physique, which resulted in a decrease in the waist circumference by 3.6 cm ($p < 0.05$) and a chest circumference of 2.7 cm ($p < 0.05$). The participants of the experiment increased 149 ml ($p < 0.01$) vital capacity indicators of the lungs, the heart rate at rest decreased by 5 beats / min ($p > 0.05$). Significantly improved the results of functional tests: in the Sample Rod for 7.2 seconds ($p < 0.05$), in Genchi's Sample 4.8 seconds. ($p < 0.05$). Athletes increased their results in test exercises, allowing

them to assess their physical fitness; flexion and extension of the arms in a prone position 3.6 times the number ($p<0.05$), lifting the body from the supine position for 1 min 5.36 times the number of times ($p<0.05$), bending and stretching the arms in the hands on a low bar 2.86 times the number of times ($p<0.05$), lifting the bar with a maximum weight of 2.16 times ($p<0.05$), brush strength measurement (dynamometry) 4.3% ($p<0.05$).

During the design and approbation of experimental methods of training, taking into account the literature [51-53], methodological and practical recommendations were formulated that characterize the specifics and determine the effectiveness of the training process in the preparatory period for people with cerebral palsy. Among them the following, it is necessary to use high-quality specialized training equipment, equipment (special bench), adapted to the specific nosology of athletes with disabilities. The use of special equipment (overalls, belts) is recommended. You should apply a special method of training athletes with disabilities in the preparatory period, taking into account the individual characteristics of their nosology. It is necessary to use an individual approach to athletes with disabilities in the process of training. It is necessary to implement the implementation of monitoring and self-monitoring processes for the growth of results, state and level of satisfaction of the students. The coach should form a certain psychological environment in which disabled athletes have increased motivation to practice Russian press. It is necessary to correct the mistakes made earlier and clarify certain elements during the exercise.

CONCLUSION

The results of the research allowed us to: develop a methodology for sports training in the preparatory period for athletes with disabilities with cerebral palsy, which is based on voluntary systematic physical exercises that ensure the maintenance and improvement of health, a real way to self-assertion, social adaptation and integration into society, new impressions, correction physique and maintaining a healthy lifestyle. It was possible to assert that the methodology of the training process on the Russian press of athletes with cerebral palsy becomes effective if the requirements of athletes with disabilities to the availability of the necessary infrastructure, material and technical support, special programs (techniques) and the mandatory use of an individual approach to athletes are met, taking into account their nosology.

It becomes clear that the effectiveness of the training process on the Russian bench among disabled people with cerebral palsy is very high, which allows them to increase their physical fitness in the preparatory period.

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