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Assessment Of The Level Of Preparedness Of Athletes With Infantile Cerebral Palsy For Adaptive Sports.

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ABSTRACT

For people with disabilities who are going to start sports, an early adequate assessment of their preparedness for training, competitive and other types of muscular activity is necessary. For adaptive sports tests assessing the physical condition of disabled people are not developed. In this regard, the goal was set: to develop a set of control exercises to assess the degree of preparedness of athletes with the defeat of the musculoskeletal system to engage in adaptive sports. The authors developed the following complex of unified control exercises (tests). On the evaluation of coordination: throw the ball into the goal, installed opposite the corresponding box, successively at 3, 5, 7 m; the criterion of offset is the touch of the goal ball at the moment of the first strike against the pad; taking the starting position on the site with time (10 attempts). On the assessment of endurance: throws balls at a fixed distance, taking into account the time sequentially at 3, 5, 7 m; the criterion of offset is the first touch of the ball of the court on the control line or behind it. On the assessment of technical skill: the ball throws the accuracy of a given distance: 3, 5, 7 m; the goal is set successively to the middle, diagonally to the left and to the right, along the boundaries of the area on the left and on the right; the criterion of offset is stopping the ball on the target. The presented complex of control exercises is designed to assess the degree of preparedness of athletes with the defeat of the musculoskeletal system to engage in adaptive sports and can be recommended for use in the training process and scientific work in order to study the dynamics of the growth of athletic skills of athletes with disabilities.

Keywords: adaptive sports, infantile cerebral palsy, testing, control exercises, physical condition.

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INTRODUCTION

The onset of any pathology is always accompanied by the development of numerous disorders in the body [1,2]. This was confirmed in a large number of clinical observations [3-6] and numerous experimental studies conducted on different biological objects [7,8]. It becomes clear that the development of dysfunctions in the body leads to a weakening of its adaptation and functional capabilities [9]. All this is true for people with persistent loss of some functions falling under the concept of disabled people [10,11]. This category of patients especially needs close attention of physicians and rehabilitation specialists [12]. It is recognized that the greatest possible correction of their condition is possible with the help of regular physical exercises [13], including in the framework of sports [14].

It is recognized that for such a category of people, an early adequate assessment of the level of their preparedness for training, competitive and other types of muscular activity is necessary [15,16]. For sport of healthy people, a wide range of standards and tests has already been developed. In adaptive sports, this problem remains extremely acute [17,18,19]. Based on the characteristics of adaptive sports, athletes with disabilities should demonstrate the best results: by the strength of the throw reflecting the strength of the upper extremity belt; on the accuracy of movements indicating the safety of coordination of movements; on physical endurance for sports.

These requirements require the development of control exercises (tests) to determine the degree of preparedness of the athlete, evaluate the effectiveness of the training program and the dynamics of the growth of sportsmanship. In this regard, in this work, the goal was to develop a set of control exercises to assess the degree of preparedness of athletes with the defeat of the musculoskeletal system to engage in adaptive sports.

MATERIALS AND METHODS

The study was approved by the local ethics committee of the Russian State Social University on September 15, 2016 (protocol No. 9). The research was conducted on the basis of the Russian State Social University.

The research uses a set of methods, including theoretical analysis and generalization of scientific and methodical profile and non-core literature, pedagogical observation of athletes with infantile cerebral palsy during the training process.

RESULTS OF INVESTIGATION AND DISCUSSION

A study of available literature sources showed that the efforts of modern specialists in the field of adaptive physical culture and sports are more focused on developing training programs and special assignments for training the necessary qualities and skills [20]. Almost no attention is paid to the methodology for assessing the dynamics of development of athletes with disabilities. In particular, there is no scientifically proven methodology for assessing the readiness of people with disabilities to engage in sports.

The document regulating the training of athletes with infantile cerebral palsy is the Federal Standard of Sport Training approved by the Ministry of Sport of Russia for people with musculoskeletal involvement. In its annexes 5-7, the following standards for general physical and special physical training are listed for admission to groups at each stage of sports training. Consider a possible list of standards for enrollment in groups at the initial training stage (Table 1).

Table 1: Norms of general physical and special physical training for admission to groups during the initial preparation phase.

Developable quality	Control exercises (tests) *
	I functional group of men, women
Coordination	Throws the ball in the target, 10 attempts (the number of balls that hit the target, at least 5)

Endurance	Throw 6 balls at a set distance in view of time (no more than 8 minutes)
	Throw balls to the center line of the site, 10 attempts (at least 7 successful)
Technicalskills	Throws the ball at an accuracy of a given distance: 3, 5, 7 m (at least 5 hits from 10 attempts at each distance)
	Throws of the ball on the accuracy of certain points of the site: the middle, diagonally, along the boundaries of the site (at least 5 hits from 10 attempts at each of the points)
II, III functional groups of men, women	
Coordination	Throws the ball in the target, 10 attempts (the number of balls that hit the target, at least 6)
	Occupation of the initial position on the site, taking into account the time (no more than 1 min)
	Throw balls to the center line of the site, 10 attempts (at least 9 successful)
Technicalskills	Throws the ball at an accuracy of a given distance: 3, 5, 7 m (at least 6 hits out of 10 attempts at each distance)
	Throws the ball at the accuracy of certain points of the site: the middle, diagonally, along the boundaries of the site (at least 6 hits from 10 attempts at each of the points)
* In the absence of the physical capabilities necessary to perform the control exercise (test), an alternative control exercise (test) is conducted or not carried out, the test is carried out according to the control exercises (tests) performed.	

Undoubtedly, the presented standards are able to fully evaluate objectively the readiness of athletes to take part in the program of the corresponding stage of sports training. They are aimed at assessing all the qualities necessary for adaptive sports: coordination, endurance and technical skill. They are based on the main actions of the athlete in the process of training - throwing the ball and moving around the site. Nevertheless, some points remain unresolved. Almost all the control exercises are built on the performance of ball throws to a certain point. It remains unclear, firstly, what to consider as a criterion of offset: touching the ball of the target mark when it first touches the surface of the site or stops at the target mark after the completion of the movement; secondly, what is the diameter of the target; Thirdly, whether the points of the site are chosen arbitrarily each time in assessing technical skill, or they are the same for all the tested [21,22].

In our opinion, the presented control exercises can be used as a basis for assessing the readiness of athletes for adaptive sports, but in order to obtain reliable, reproducible results, they should be specified and unified.

As a result of analysis and synthesis, we developed the following standardized control exercises (tests).

Evaluation of coordination:

Throw the ball at the target, installed opposite the corresponding box, successively at 3, 5, 7 m; the criterion of offset is the touch of the goal ball at the moment of the first strike against the pad; - Occupying the starting position on the site with time (10 attempts).

Endurance assessment:

Throws balls at a fixed distance, taking into account time, successively at 3, 5, 7 m; the criterion of offset is the first touch of the ball of the court on the control line or behind it.

Evaluation of technical skill:

Throws the ball at an accuracy of a specified distance: 3, 5, 7 m; the goal is set successively to the middle, diagonally to the left and to the right, along the boundaries of the area on the left and on the right; the criterion of offset is stopping the ball on the target.

Scheme of location of targets on the site is shown in Figure 1. The diameter of the targets and the width of the control lines approximately corresponds to two ball diameters - 20 cm. All throws are made from box 3 or 4, first working, and then, if possible, with an inoperative hand. For each hand, in all tests, a series of 10 shots from the top and 10 shots from the bottom are performed. The break between a series of shots and exercises is at least 5 minutes.

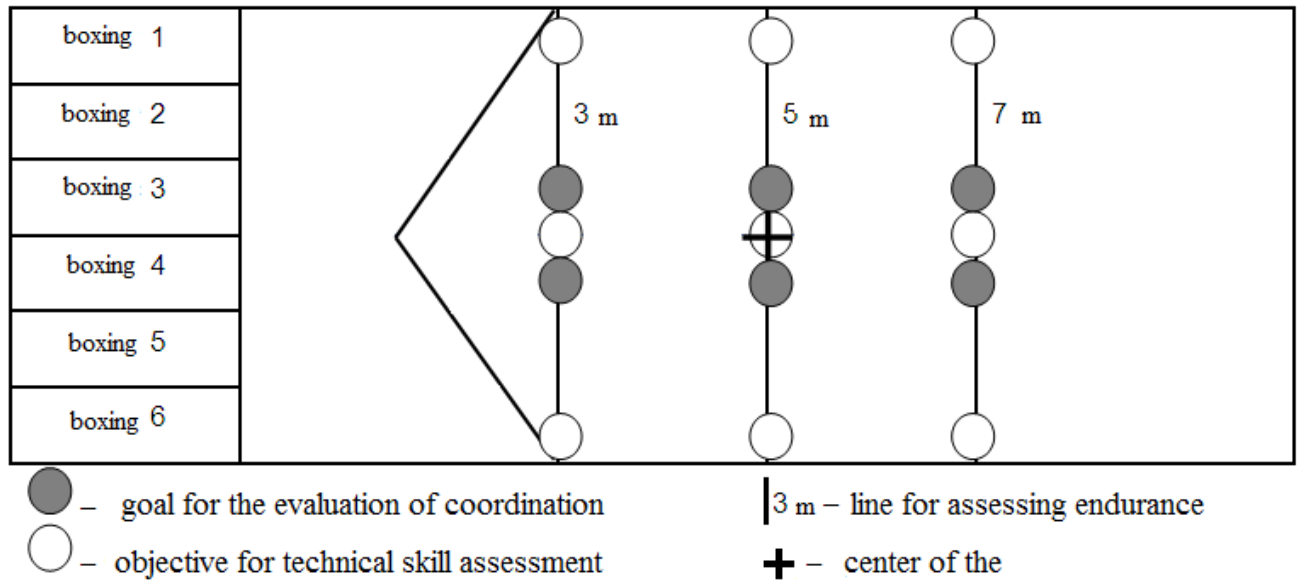


Figure 1: Scheme of the location of objectives for assessing the developed qualities on the site.

CONCLUSION

The presented complex of control exercises is designed to assess the degree of preparedness of athletes with the defeat of the musculoskeletal system to engage in adaptive sports and can be recommended for use in the training process and scientific work to study the dynamics of the growth of sports skills of athletes with disabilities.

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