© Eurasian Journal of Sport Science 2024; 1(2): 252-256
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Pedagogical study of physical development and functional state powerlifters c pathology locomotor apparatus

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Abstract

Purpose: Improving the performance of Paralympic powerlifters on the basis of rehabilitation measures with the use of specialized exercises and technical means.

Methods: Theoretical analysis and generalization of special literature data; pedagogical observation; pedagogical experiment; anthropometric and physiological research methods.

Results: As a result of the assessment of health status of powerlifters-paralympic athletes according to G.L. Apanasenko, at the beginning of the pedagogical experiment it was revealed: according to the Kettle index, 27.8% of powerlifters-paralympic athletes were found to be underweight, 42.8% were overweight, and 29.4% of para-athletes were found to be underweight. The vital index showed that 14.3% of powerlifter-paralympic athletes were found to have a low level of GI; 35.7% had a medium level; and 50% were found to have a high level of vital index development. The SI test or strength index, a high level was found in 50% of Paralympic powerlifters, an average level of strength qualities development was found in 42.8%, and a low level was found in only 7.2%. According to Robinson's index, it was found that 42.8% of powerlifters-paralympic athletes had a low index, i.e. aerobic capabilities were below the normative values, while 28.8% of the subjects had an "average" index, i.e. it corresponded to the norm. Minute volume of blood circulation or MOC showed that 64.4% of Paralympic powerlifters had a high level of recovery and 35.6% of the subjects had an index above average, which allows us to state good recovery rates.

Conlcusion: The proof of the effectiveness of the experiment was the performance of the experimental group of powerlifters-paralympians at the Open Championship of Uzbekistan on "bench press" held in February 2022 in the city of Tashkent. So in five weight categories, in which participated powerlifters-paralympic athletes of the experimental group won 5 gold medals. In 2022 in February in Tashkent at the Open Championship of Uzbekistan in powerlifting in the exercise "Bench Press" on repetition (100 kg for maximum repetition) Paralympians of the experimental group at this championship in 4 categories showed results higher than those of healthy powerlifters and won 4 gold medals.

Keywords: adaptive physical training, determination of the level, rehabilitation, PODA in powerlifters

Introduction

The activity of Adaptive physical education and its types: adaptive physical training education (formation of basic foundations of physical education), adaptive motor recreation (self-regulated motor activity, overcoming confined spaces, communication, interesting motor activity, overcoming the confined space, communication, interesting leisure time, maintenance of working capacity), adaptive sport (maximum perfection adaptive-compensatory capabilities, mobilization of physical, intellectual, emotional-psychic potential), physical rehabilitation (restoration or compensation of lost abilities). lost abilities). Modern Paralympic powerlifting gathers a huge number of spectators around it, motivating them to engage in this sport, and its entertainment lies in keeping the attention of fans in constant tension. And today, Paralympic powerlifting provides an opportunity to show their physical qualities, athletic character, establish friendly and athletic relations between Paralympic powerlifters from all over the world.

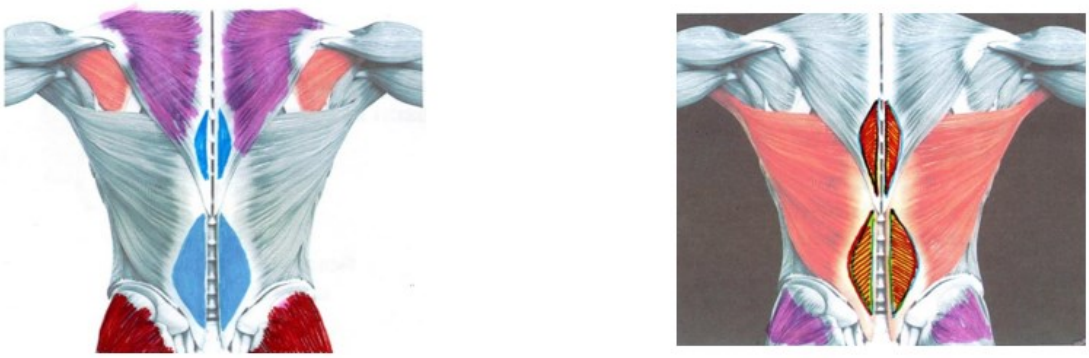
Methods

Theoretical analysis and generalization of data specialized literature; pedagogical observation; pedagogical experiment; anthropometric and physiological methods of research; pedagogical testing of physical qualities with regard to deviations PODA in powerlifters - Paralympic athletes with lesions of the locomotor system of the locomotor system; study of functional indices in examination of powerlifters - Paralympic athletes; determination of body posture and identification of asymmetries; dynamometry method and determination of the level of dynamometry method and determination of the level of strength in the deadlift; testing and assessment of the level of health according to the method of (G.L. Apanasenko, 1988)

Results and discussion

The problems of formation and formation of The problems of formation and formation of the motor sphere in persons with profound disorders of the locomotor apparatus have been studied. The motor apparatus, where, for example, G.P. Vinogradov and E.A. Ivanchenko, developed a method for assessing the effective-

Fig. Visual load distribution in a powerlifter a) and a para-powerlifter b)



а) б)

ness of social protection of disabled people with defeat locomotor apparatus.

The basics of The basics of physical recreation, its functional purpose as a type of physical culture, recreational training and health-improving technologies are considered. recreational training and health-improving technologies. The issues of psychological support of physical recreation are covered. Most of the studies are devoted to persons with lower extremity lesions of various origins, respectively, requiring the use of physical recreation. lower limbs of various origins, respectively requiring use of various types of adaptive physical culture.

asymmetry and imbalance of muscle tone and bone tissue. However, when analyzing the scientific methodical literature it was revealed that the problems of physical training, organization of recovery measures, creation of physical training and rehabilitation of athletes.

The effectiveness of the results during the study period was obtained through the use of an improved simulator "Smith Machine". The applied trainings at the second stage took place in the mode of general physical training and were aimed at restoring the statodynamic function, while the work on the mutual compensation of pathological bends of the spinal column should continue after the experiment. An experimental

Table. Performance of powerlifters-paralympic athletes of the experimental group in the exercise “bench press”

N	Name	Bodyweight	Before correction	After correction	% of differences	P=validity
1.	E-va M.	70	65	95	46,15	<0,05
2.	U-v A.	54	115	135	17,39	<0,05
3.	B-v U.	78	110	130	18,18	<0,05
4.	G-v Yu.	67	90	115	27,77	<0.0
5.	G-v A.	57	80	105	31,25	<0,05
6.	Ch-v E.	72	65	95	46,15	<0,05
7.	D-v E.	67	120	140	16,66	<0,05
X ± σ			92,143±23,248	116,429±18,867	29,07	P<0,05

The questions connected with restoration of motor functions are considered, technical and tactical training athletes Paralympians c lesions of the musculoskeletal apparatus in comparison with healthy athletes.

The methods of restoration of motor

group of Paralympic powerlifters performing this exercise on an improved simulator increased the effectiveness of the bench press exercise and improved its technique. The results of the study obtained before and after the six–month adaptation of Paralympic

powerlifters to applied physical activity, taking into account the pathology of the lower extremities, as well as using technical means of training and physical training, indicate the development of strength, coordination abilities and improvement of technical data. Table 5 presents data before and after corrective measures in the experimental and control groups. Our proposed set of special exercises solved 2 tasks: firstly, at the first stage, efforts were directed at eliminating muscle asymmetries and various kinds of deviations in body posture, in particular, the degree of misalignment of the pelvis, shoulder girdle, in pathological bends of the vertebral column, directly resulting from the pathology of the lower extremities. All this also affected the biomechanical parameters. This type of physique changes the location of the general center of gravity of the body and its relation to the area of support. The curved bend of the vertebral column forms a pathological arc characteristic of scoliosis, therefore, the CT of the body will shift either forward, relative to the frontal plane, or the vertical lowered from the CT of the body will be shifted either to the right or to the left, that is, relative to the sagittal plane. In such positions, the stability of the body is lost, due to which the body falls either forward or to the sides.

There is also a violation of coordination abilities, which leads to the formation of a pathological statodynamic stereotype. Due to the fact that the vertical lowered from the CT was not in the center of the support area, but was tilted forward, to the right or to the left indicates that the body retains an unstable position and indicated a significant decrease in the statodynamic function of the spine by 25.20±4.25mm, 37.20±12.68 mm, 36.83±6.01 mm. Similar indicators were recorded in CG, amounting to 799.01 ±24.8, and 700.89±24.20. The data obtained were confirmed by an improvement in the indicators of a number of deviations identified during the experiment.

Thus, the pelvic misalignment decreased from 3.19± 0.55 to 0.70± 0.19 cm; in CG, the misalignment of the pelvic bones also decreased and amounted to 3.26 ± 0.45, but significantly lower than in EG and amounted to 2.11± 0.39 cm. For EG, the percentage of differences was 77.9%, while for CG - 35.3%, with $P<0.05$.

Of the anthropometric indicators, the most informative is the curvature of the spine arch. In the EG before correction, the curvature of the spinal column was 3.12 ± 0.95, after correction – 2.09 ± 0.83, the percentage of differences was 33.01%. For CG, the values are as follows – at the beginning 3.15 ± 0.97 cm, and after that the indicator decreased to 2.84 ± 0.99; the difference was – 9.8%. The power capabilities of Paralympic powerlifters were judged by the strength of the hands established by dynamometry. It was found that in EG, the brush strength before correction was 41.7 ± 3.55 kg, and at the end of the experiment was 46.8± 6.74 kg, the difference was 12.2%, and for CG, the initial indicator was 41.4± 10.05, and at the end of the experiment - 44.5±7.85, the difference was 7.5%. In the pull-up on the crossbar of the EG at the beginning of the experiment, the test indicator was -18 ± 3.25 times, after training effects, its value increased to 23 ± 3.15 times, that is, the indicator increased by 27.7%. In CG, the initial value was 17 ± 3.23, at the end of the experiment -20 ± 3.23, and the difference was 17.6%.

Another test to identify strength qualities is the strength of the extensor muscles of the back, which after training from 138.2 ± 0.60 kg increased by 7.9% or amounted to– 149.12 ± 1.55. In the study, the asymmetry of the shoulders was established, calculations to determine the shoulder index showed that the asymmetry in the EG with 63.02 ± 3.05% reached 78.18 ± 3.5% - in the CG group it was less pronounced and equal to 65.15 ± 2.89%, after training the symmetry was smoothed out and amounted to 72.27 ± 3.62%.

The result of the performance indicators of static exercises, which can be attributed to the technical and tactical actions of Paralympic powerlifters, is the "bench press" exercise.

Conclusion

Due to the introduction of specially corrective exercises of curvature and curvature of the spinal column in the training process of powerlifters-paralympic athletes, the index of curvature of the spinal column arc. in EG before correction the arc of curvature of the spinal column was 3.12±0.95, after correction - 2.09±0.83; the percentage of differences amounted to 33.01%. For CG, the values are as follows - at the beginning 3.15±0.97cm, and after the index decreased to 2.84±0.99; the difference amounted to - 9.8%.

These exercises had an effective effect on the correction of the spinal column.

Thanks to the developed method of powerlifters -paralympians strength training and implementation in the training process, the strength capabilities of powerlifters-paralympians by hand strength established by dynamometry in EG hand strength before correction was 41, 7 ±3,55 kg, and at the end of the experiment was 46,8±6,74 kg, the difference was 12,2%, and for CG the initial index was 41,4±10,05, and at the end of the experiment was 44,5±7,85, the difference in the results was 7,5%.

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