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The impact of unified handball on the level of general physical training and psychosocial adaptation among 13-14 year-old pupils with mild mental retardation

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Abstract: The tested method of unified handball training sessions organization involving volunteers - students of higher educational establishments allowed to reveal positive impact of adaptive sports not only on physical readiness of experiment participants, but also on their psychosocial rehabilitation. It is interesting to study communicative qualities development among schoolchildren during classes with volunteers-students. With the number of classes increase the level of interpersonal contacts also increased exponentially, the level of tension during new motor actions mastering decreased. **Materials.** The material for the study formed the results of students' physical readiness in a boarding school for children with LHO (Limited health opportunities) № 1 in Astrakhan (21 people, age - 13 - 14 years-old). All pupils had the following diagnosis: easy adjustable degree of mental retardation, there were no other reasons for physical education and adaptive sports restriction. **Research methods.** Criteria included into the study: complex analysis of physical qualities development; the level of schoolchildren's psychosocial adaptation analysis (based on a joint questionnaire organization among parents and schoolchildren); voluntary participation in the study (unified handball lessons), the decision on the activities was made by parents and guardians. Criteria of exclusion: pupils who previously went in for adaptive sports - game types. All students underwent an annual medical examination, assessment of the risk factors of disadaptive reactions development to physical load was determined by the results of functional samples. The initial level of physical qualities development was assessed on the basis of the control normatives of the Federal State Educational Standard for Secondary Schools. Initially, the experimental group ($n_1 = 10$) and the control group ($n_2 = 11$) were formed. The groups didn't have considerable differences in gender, age and physical readiness. Statistical processing of the results was carried out using standard methods of variation statistics (the USA Statistica 10). The validity of the differences was evaluated by Student's t-criterion. Distinctions were considered reliable in case $p < 0.05$. The correlation analysis was realized with Pearson correlation coefficient. **Results.** There was a steady increasing indices of physical readiness and psychosocial adaptation. **Conclusion.** The use of unified handball elements in a group of students with a corrected intelligence disorder allows to form the corresponding level of physical and communicative qualities development necessary for adaptive sports lessons.

Keywords: unified handball, students, adjustable intellect disorder.

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INTRODUCTION

Adaptive physical culture studies and, in particular, concerning adaptive sports attract not only the specialists in the sphere of physical culture and sport, but also teachers, psychologists, physiologists, speech pathologists, doctors and other specialists [2;

3]. The most progressive methodologies of training were mastered and successfully used. Special Olympic Games organization provides people with mental retardation with the conditions for going in for sports and physical culture in any age. More than one million of people from 162 countries take part

in them.

Special Olympic Games form the most popular sports movement of this kind, as they are available and developing. This kind of sports competitions include unified handball [4,7,6,8]. Research workers [1,5,9,10] mention great practical significance, value and necessity of adaptive physical culture and sport lessons for people with LHO (Limited health opportunities). In this connection we studied the use of unified handball elements in the group of 13-14 year-old students at a boarding school № 1 in Astrakhan with mild mental retardation diagnosis.

MATERIALS AND METHODS

During the work we analyzed the results of physical readiness level of students, the results of functional tests, the dynamics of physical qualities development. Communicative skills development was defined by the questionnaire survey in which both parents and students took part.

RESULTS AND DISCUSSION

The results of the initial control normatives in the examined groups didn't reveal considerable differences in students' physical readiness level. The implementation of power standards did not cause any difficulties among 56 ± 5.2 % of students, a satisfactory level of flexibility was revealed among 39 ± 3.7 % of the respondents. The endurance test caused difficulty among 86 ± 4.1 % of schoolchildren, unsatisfactory results of speed qualities development 88 ± 2.7 % and coordination abilities 93 ± 2.5 % were revealed among children at the initial stage of the study. In order to solve the main tasks of the presented work at the preliminary stage, a survey among parents and guardians was carried out. The questionnaire consisted of three blocks, each block included five questions. The first block of the questionnaire allowed defining the attitude of parents and guardians to systematic adaptive sport lessons. The second block of questions was directed toward the level of a child's communicative qualities development. The third block of questions related to the possibility of cooperating adaptive physical culture and sports activities with children. Parents and children answered the questions together, the result of the answers at the beginning of the study revealed the following priorities:

- according to the first block of questions most parents and guardians were for the physical culture lessons in a form of "for own development" 76 %, 11% of the respondents were positive concerning adaptive sport and 13% didn't consider additional adaptive sport lessons necessary in a day regime. According to the second block of questions more than 50% of respondents were for a positive influence of physical culture and sport on children's communicative qualities development, more than

20% of parents and guardians considered priority kinds of communicative qualities among children sports games and 26% of the respondents expressed uncertainty in the benefit of physical culture and sport lessons. According to the third block of questions more than 50% of respondents were positive concerning the question of cooperative adaptive physical culture lessons with children, 30% of the respondents expresses the desire to train with children, but didn't have opportunities for it and less than 20% of respondents were not sure in the benefit of cooperating lessons with children. At the end of the held research work there were considerable changes in the answers of the respondents. In the first block of questions almost all parents and guardians were for additional adaptive physical culture lessons, unchanged was the format of "for own benefit" lessons, at the same time all children were for the participation in the competitions. According to the second block of questions all respondents mentioned positive changes in children's communicative qualities development (among those, who go in for unified handball), the number of contacts with volunteers increased, there appeared the desire to master the ball "like a coach". At the same time all respondents mentioned the interest of children in a competitive variant of the lessons organization. According to the third block of questions all respondents gave affirmative answers concerning unified handball cooperating lessons with children. The dynamics of psycho-emotional adaptation of children to cooperating training with volunteers and parents is of great interest. At the first stages of training, children who trained with volunteers showed some uncertainty in tasks fulfillment, children were unsociable, but during the second month of classes there was a significant change in communication with volunteers, the use of game elements of unified handball allowed to improve the communicative skills of children.

The dynamics study of physical qualities development during the research in the experimental group ($n_1 = 10$) helped to reveal a significant increase of coordination abilities and speed – power qualities. No significant changes were observed in the control group ($n_2 = 11$), where physical culture was within the school program (table).

Autocorrelation function coefficients obtained in the course of mathematical processing made it possible to conclude that there is a significant role of training elements of unified handball and physical qualities development $r = 0,477$; $p < 0,05$.

Elements of unified handball used for training with students of the experimental group ($n_1 = 10$) characterized by not high level of physical qualities development, are available and quite effective. The applied elements of unified handball, which were used for lessons:

- targeted pass, ball dribbling 10 meters, point shot;
- speed pass;
- ball dribbling according to set trajectory;
- ball taking with the indirect pass in movement;
- goal attack with the indirect pass;
- ball throwing at the distance in the mentioned

corridor.

It should be noted that all exercises were fulfilled in pairs with parents or volunteers. Before the task fulfillment parents and volunteers demonstrated the exercises with the elements and in a complex.

Indices	The Initial testing		I point of control in 2 months		II point control in 4 months		III point of control in 6 months		IV point of control in 8 months		Control testing in 9 months	
	n ₁ -10	n ₂ -11	n ₁ -10	n ₂ -11	n ₁ -10	n ₂ -11	n ₁ -10	n ₂ -11	n ₁ -10	n ₂ -11	n ₁ -10	n ₂ -11
1. Shuttle running 13x10 (seconds)	12,4±1,5	12,7±1,2	12,1±1,4	12,5±1,3	11,2±1,4	12,7±1,2	10,9±1,1	12,3±1,4	10,1±1,1	12,5±1,3	10,2±1,1*	12±1,2
2. 60 meters running (seconds)	11,7±0,9	11,5±1,1	11,9±1,1	11,7±1,4	11,2±1,1	11,8±1,2	10,4±0,9	11,4±1,1	10,3±0,8	11,5±1,1	10,3±0,9	11,4±1,2
3. "Swallow" exercise (seconds)	9,7±4,2	9,5±1,1	10,3±0,9	9,7±1,0	12,5±1,4	9,9±1,2	18,2±1,1	9,7±1,4	18,0±1,3	9,5±1,5	18,1±1,1*	9,7±1,4
4. Chin ups at a high bar boys (amount of repetitions)	6±2,5	5±1,8	6±2,5	5±2,0	6±2,8	5±2,5	6±2,4	5±1,0	6±2,5	5±1,8	6±2,5	5±2,5
5. Dip up at a gymnastic bench girls (amount repetitions)	5±1,2	5,6±1,4	5,7±1,2	5±1,0	6,2±1,4	5,6±1,2	6,8±1,2	5,2±1,4	7,2±1,2	5,6±1,4	7,2±1,2*	5,6±1,2
6. skipping within 20 seconds (amount of repetitions)	19,2±5,4	20,1±6,2	22±4,6	20,6±5,4	26±6,1	22,4±5,0	28±4,2	24,4±5,0	30±6,2	24,1±4,2	30±4,4*	23±2,6
7. Standing long-jump (cm)	142±15	140±10	145±12	144±11	150±10	143±10	150±10	145±10	154±10	143±11	158±8*	144±10

Note: * p<0,05 in comparison with the control group.

CONCLUSION

Thus, studying the application of unified handball elements in the group of schoolchildren who have element disorder of intellect, showed the diversity of positive shifts in psychosocial rehabilitation, the level of physical development and regulatory-adaptive processes development. The main criteria and regularities determination of physical qualities development using of unified handball elements in practice of adaptive physical culture in terms of this disorder among children, would help to create the conditions for perspective adaptive sport development.

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