

## The effectiveness of the author's training program for football for the athletes of Special Olympics in Ukraine

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### Abstract

In the theory of sport the issue concerning training athletes with intellectual disabilities is one of the least studied ones. The article considers the methodical features of training sessions within the program of Special Olympics. It is established that the individual approach in the training process of Special Olympics is the quintessence of efficiency and safety of training activities. Based on the analysis of these diseases there has been developed a number of methods that will allow the football coaches of Special Olympics to improve the quality of training of persons with intellectual disabilities, as well as to form their social skills and the relationships in the football team. During the research there have been defined the main provisions, that should be taken into account while the organization of the training process of persons with intellectual disabilities: the individual approach to holding training sessions; the peculiarities of the diseases; the abilities of the athletes due to the degree of intellectual disabilities; the level of physical fitness; the age characteristics; the practical experience of coaches; the differentiation of means, methods and forms of organization of sessions. Besides, there has been verified the effectiveness of the training program of Special Olympics for football. The prospects for further research include the implementation of the training program of Special Olympics for football in special correctional institution.

**Key words:** *individual approach, social adaptation, intellectual disabilities.*

### Introduction

The modern stage of social development is characterized by an increase in the number of people with disabilities, including those who have intellectual disabilities (Ber-Haim, & Bart, 2006). One of the major problems of these persons is the difficulty of their integration into the society. Adaptive sport is an extremely effective and affordable way to solve this problem (Salmon, et al., 2008; Theodosiu, Mantis, & Papaioannou, 2008; Spessato, Gabbard, & Valentini, 2013).

Training athletes with intellectual disabilities is organized in accordance with the typical training programs developed by Special Olympics International (SOI) (Barnett, Rodgers, & Zask, 2015; Imas, Borysova, et al., 2017, 2018). It is well known that an important condition of efficiency of the training process of athletes of Special Olympics is an individual approach, according to which the content, nature and intensity of training, as well as the methods of training depend on the degree of intellectual disabilities, the nature and specifics of the disease, possible secondary disturbances, the age of athletes etc (Kennedy-Behr, Rodger, & Mickan, 2011; Poulsen, Ziviani, & Cuskelly, 2007; Lai, et al., 2014). Although the existing programs contribute to the quality of the training process, they do not address the individual abilities of athletes in all, including the degree of intellectual disabilities, the presence of secondary diseases, the age peculiarities etc.

Along with this, the purpose of training of athletes of Special Olympics is to achieve the maximum possible level of social integration for a particular athlete by means of improving physical, technical, psychological preparedness in the process of training and competitive activity in the chosen sport (Cohen, Morgan, Plotnikoff, Callister, & Lubans, 2015; Rudisill, 2004; Weiss, & Giel, 2005).

Special Olympics International cultivates different (summer and winter) sports. One of the most popular and affordable among them is football. In Ukraine, football is also very popular. All-Ukrainian public organization of disabled people Special Olympics Ukraine has involved about 8 thousand people with intellectual disabilities in 17 regions of our state in playing football. Major interest that people with intellectual disabilities have in football encourages searching for the ways to improve the training process for this category of persons.

### Materials and methods

In the research and methodological literature, the experts from various fields explore the questions of life of persons with intellectual disabilities, in particular: the problems of adaptation in the society (Griffiths, & Billard, 2013); the specifics of social integration by means of physical culture and sports (Kogut, & Marynych, 2522

2016; Mazzoni, Purves, Southward, Rhodes, & Temple, 2009); the specificity of sports training (Martin, Rudisill, & Hastie, 2009; Logan, Robinson, & Webster, 2014; Robinson, & Goodway, 2009). At the same time, there are a few works considering the questions of organizing the training process of the athletes of Special Olympics. Thus, the authors (Zask, et al., 2012) have studied the questions of training of athletes with intellectual disabilities in accordance with the programs of Special Olympics for track and field, basketball and cross country skiing. However, the available literature contains no information on the improvement of training process of football players of Special Olympics, and the public necessity in the substantiation of this approach is extremely important, which determined the choice of the research issue.

*The goal of the research* is improving the efficiency of the training process of persons with intellectual disabilities through the development and verification of the effectiveness of the training program of Special Olympics for football.

## Results

Due to the analysis of modern research and methodological literature, materials from the Internet and results of the coaching practice, it became possible to develop a training program for football, which has a variable component and is focused on people with a mild, a moderate and a severe degree of intellectual disabilities. In order to determine the specificity and focus of training sessions with the aforementioned category of persons it is necessary to take into account the specifics of their cognitive and motional spheres. According to this, the individualization of training process of athletes with intellectual disabilities in the phase of initial training involves the use of various means and methods of training, forms of organization of training sessions depending on the degree of intellectual disabilities of the athletes and the peculiarities of their diseases.

It has been found that the most common diseases of the football players of Special Olympics are Down's syndrome, Prader-Willi syndrome, autism, cerebral palsy, embryofetal alcohol syndrome, Martin syndrome, Apert syndrome, and phenylketonuria. Based on the analysis of these diseases there has been developed a number of methods that will allow the football coaches of Special Olympics to improve the quality of training of persons with intellectual disabilities, as well as to form their social skills and the relationships in the football team.

The developed ideas for the organization and holding training sessions with individuals having intellectual disabilities have become the basis for the development of the training program of Special Olympics for football. The training program contains practical guidelines for implementing the didactic particularities of holding training sessions; the characteristics of diseases and appropriate instructions concerning the choice of exercises; the basics of teaching technical elements of football game; the eight-week distribution of the training material; the complexes of didactic and moving games; the postural-alignment exercises; the indicators of physical and technical preparedness, as well as psycho-emotional state of the athletes. The implementation of the training program not only contributes to the improvement of the process of training of football players, but also activates the social integration of persons with intellectual disabilities through the use of effective classes (holding joint training classes with healthy people, active games, relay races, training while playing, the use of background music, etc.) and extracurricular activities (visits to places of public resort, the organization of special events, etc.).

The effectiveness of the implementation of the developed training program of Special Olympics for football to the training process of persons with different degree of intellectual disabilities in a special correctional educational institution has been proved by positive changes of indicators of technical competence. In the second stage of the sequential experiment, the students engaged in football, acquired basic technical elements of the game which contributed to the improvements in the tests: dribbling of the athletes with a mild degree of intellectual disabilities by 18.7 % from the preliminary results, with a moderate degree – by 7.15 %, with a severe degree – by 5.6 %; "distant kicking of a ball" of the athletes with a mild degree of intellectual disabilities – by 25.7 %, with a moderate degree – by 14.6 %, with a severe degree – by 6.7 %; "exact kicking of a ball" of the athletes with a mild degree – by 9.8 %, with a moderate degree – by 6.7 %, with a severe degree – by 15 %.

The sequential pedagogical experiment showed that the implementation of the training program of Special Olympics for football to the training process of people with different degrees of intellectual disabilities has allowed to improve its quality, which is evidenced by the improvement of indicators of physical fitness. The experimental variables of physical fitness of persons with a mild degree of intellectual disabilities significantly changed in the third stage of the pedagogical experiment. The persons with a moderate degree of intellectual disabilities showed no significant differences only in tests for determination of coordination abilities. The persons with a severe degree of intellectual disabilities demonstrated significant differences only in the parameters of flexibility in the knee, ankle and hip joints, abdominal strength and physical performance. This is due to the existing diseases having affected the cerebral cortex of the brain and caused the disorder of the cerebellum which is responsible for coordination of movements. Besides, during the research the persons with intellectual disabilities managed to acquire the basic technical and tactical elements of football (table 1).

Physical fitness testing of persons with intellectual disabilities engaged in football was held in accordance with the volunteer program of Special Olympics FUNfitness. The program consists of five screening stages: flexibility (flexibility of joints); functional strength; balance; musculo-skeletal system; physical fitness. The flexibility of joints was measured with a help of a pronometer. The pedagogical testing was held in three steps.

Table 1. *Technical competence of people with intellectual disabilities*

Tests	Results					
	mild		moderate		severe	
	before *	after**	before *	after**	before *	after**
30 m dribbling with encircling of posts, sec	64,8	58,7	90,7	79,5	99,8	88,3
Distant throw of a ball, m	7,9	9,0	6,3	7,6	5,0	6,6
Encircling of posts 10 m and shot on goal, sec	23,0	18,7	25,2	23,4	26,8	25,3
Distant kicking of a ball, m	18,3	23,0	15,8	18,1	15,0	16,0
Exact kicking of a ball, %	85,0	93,3	75,0	80,0	66,7	76,7

Notes: \* – before the implementation of the training program of Special Olympics for football; \*\* – after the acquisition of the eight-week training material

In the first stage the indexes of physical fitness of persons with three degrees of intellectual disabilities were defined (n=18). The athletes trained according to the existing program of Adapted Physical Education for the aforementioned category of persons for eight weeks, which was followed by a repeated pedagogical testing. The latter helped to find out that there were identified no significant changes of the athletes with a mild degree (tab. 2), a moderate degree (tab. 3) and a severe degree (tab. 4) of intellectual disabilities in this stage. Then the athletes were divided into three groups according to the degree of intellectual disabilities, and the author's eight-week program of Special Olympics for football was implemented to the training process. During the third stage of the pedagogical testing there were received the significant differences in all studied indicators of physical fitness of football players with a mild degree of intellectual disabilities in comparison with the second stage of the pedagogical testing (tab. 4), which characterizes the effectiveness of the offered program, which contributes to the improvement of the training process of athletes of this nosological group.

Table 2. *Parameters of physical fitness of persons with a mild degree of intellectual disabilities within three stages of the experiment (n=6)*

Measurable indicators in accordance with the complex of tests of the system FUNfitness	Persons with a mild degree of intellectual disabilities					
	I stage		II stage		III stage	
	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S
Bending at a right knee-joint, degree.	133,83	4,79	134,67	4,55	141,85*	4,18
Bending at a left knee-joint, degree.	129,17	5,00	130,00	4,47	142,00*	3,41
Right knee extension, degree	-3,67	0,29	-2,50	0,14	-0,83*	0,07
Left knee extension, degree	-14,33	1,46	-12,50	1,07	-2,50*	0,19
Right ankle dorsiflexion, degree.	14,33	1,05	15,00	1,41	20,67*	2,12
Left ankle dorsiflexion, degree.	15,33	1,43	16,00	1,68	24,67*	1,95
Right ankle plantarflexion, degree	40,50	4,77	41,83	3,35	49,89*	4,60
Left ankle plantarflexion, degree	40,17	4,26	40,83	3,97	50,41*	4,96
Bending at a right hip , degree.	113,67	3,83	116,33	3,83	126,17*	4,26
Bending at a left hip , degree.	112,17	4,71	115,00	5,48	126,33*	4,93
Right hip extension, degree	0,34	0,02	0,45	0,04	2,25*	0,21
Left hip extension, degree	1,12	0,11	0,98	0,07	2,05*	0,16
Right shoulder flexibility, cm	2,50	0,22	2,00	0,21	1,17*	0,09
Left shoulder flexibility, cm	4,17	0,45	3,83	0,33	3,01*	0,22
Muscular strength of lower limbs, sec	17,83	1,98	17,17	1,73	21,12*	1,72
Abdominal strength , times	21,17	2,24	20,17	2,05	26,67*	2,11
Stability on a right leg, sec	18,00	1,46	18,50	1,75	22,00*	1,98
Stability on a left leg, sec	17,60	1,58	17,67	1,59	20,55*	1,62
Right hand's distance, cm	33,00	3,43	33,83	3,21	40,65*	3,87
Left hand's distance, cm	35,33	3,51	35,17	3,15	42,15*	4,05
Performance evaluation test , Ruffier index	7,42	0,38	7,33	0,42	6,54*	0,52

Note. \* – the differences were significant between the second and the third stages of the pedagogical experiment,  $p < 0,05$

Table 3. Parameters of physical fitness of persons with a moderate degree of intellectual disabilities within three stages of the experiment (n=6)

Measurable indicators in accordance with the complex of tests of the system FUN fitness	Persons with a moderate degree of intellectual disabilities					
	I stage		II stage		III stage	
	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S
Bending at a right knee-joint, degree.	127,33	5,16	127,50	5,24	136,00*	4,94
Bending at a left knee-joint, degree.	124,17	6,31	125,00	6,32	132,90*	4,13
Right knee extension, degree	-18,67	11,06	-16,67	1,81	-10,00*	1,07
Left knee extension, degree	-19,17	17,31	-18,33	1,78	-10,83*	1,13
Right ankle dorsiflexion, degree.	11,00	1,21	11,67	5,16	15,33*	1,06
Left ankle dorsiflexion, degree.	8,67	0,96	9,00	3,46	15,83*	1,34
Right ankle plantarflexion, degree	26,00	3,02	26,67	6,06	32,14*	2,56
Left ankle plantarflexion, degree	21,33	2,50	22,00	2,45	26,33*	2,94
Bending at a right hip , degree.	108,33	6,35	109,33	7,26	120,83*	4,92
Bending at a left hip , degree.	110,33	5,32	112,17	6,34	124,17*	7,36
Right hip extension, degree	-4,17	4,92	-4,17	4,92	-0,83*	0,07
Left hip extension, degree	-9,00	4,94	-8,33	4,08	-3,33*	0,34
Right shoulder flexibility, cm	5,00	0,48	4,00	0,41	2,33*	0,19
Left shoulder flexibility, cm	7,00	0,71	6,67	0,59	4,67*	0,36
Muscular strength of lower limbs, sec	27,67	4,80	27,50	4,76	26,08*	4,43
Abdominal strength , times	11,17	0,96	11,83	0,98	16,17*	1,03
Stability on a right leg, sec	17,17	1,56	17,67	1,67	20,00*	1,69
Stability on a left leg, sec	15,50	1,73	15,83	1,42	16,17	1,59
Right hand's distance, cm	22,67	2,32	23,33	2,17	23,83	1,99
Left hand's distance, cm	21,83	2,09	22,00	1,98	23,81	2,24
Performance evaluation test , Ruffier index	9,15	0,98	9,02	1,43	7,43*	0,67

Note. \* – the differences were significant between the second and the third stages of the pedagogical experiment,  $p < 0,05$

Table 4. Parameters of physical fitness of persons with a severe degree of intellectual disabilities within three stages of the experiment (n=6)

Measurable indicators in accordance with the complex of tests of the system FUNfitness	Persons with a severe degree of intellectual disabilities					
	I stage		II stage		III stage	
	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S
Bending at a right knee-joint, degree.	120,67	7,00	121,17	6,79	137,55*	7,16
Bending at a left knee-joint, degree.	117,50	4,93	118,67	4,55	129,83*	5,43
Right knee extension, degree	-34,50	3,91	-33,33	3,21	-25,83*	2,13
Left knee extension, degree	-36,33	4,02	-35,00	3,22	-23,33*	2,09
Right ankle dorsiflexion, degree.	-2,00	0,19	-1,67	0,15	5,00*	0,43
Left ankle dorsiflexion, degree.	-1,33	0,11	-1,22	0,12	5,00*	0,47
Right ankle plantarflexion, degree	18,50	1,76	19,00	2,11	24,00*	1,89
Left ankle plantarflexion, degree	19,83	1,88	20,33	1,91	24,83*	2,07
Bending at a right hip , degree.	105,50	3,94	105,83	3,76	112,17*	3,19
Bending at a left hip , degree.	106,83	2,48	108,00	2,45	119,87*	3,82
Right hip extension, degree	-14,50	1,53	-12,00	1,09	-5,83*	0,54
Left hip extension, degree	-12,83	1,23	-11,67	0,98	-6,00*	0,62
Right shoulder flexibility, cm	9,17	0,87	8,67	0,83	6,67*	0,55
Left shoulder flexibility, cm	9,83	0,92	9,83	0,89	9,00	0,69
Muscular strength of lower limbs, sec	41,50	4,12	40,50	3,87	42,22	3,52
Abdominal strength , times	2,67	0,17	3,00	0,24	6,33*	0,67
Stability on a right leg, sec	10,00	0,98	10,50	1,08	11,17	1,07
Stability on a left leg, sec	6,50	0,66	7,00	0,66	7,33	0,75
Right hand's distance, cm	18,25	1,89	18,50	1,87	20,00	1,82
Left hand's distance, cm	17,50	1,64	17,33	1,97	18,92	1,95
Performance evaluation test , Ruffier index	10,77	1,05	10,72	0,87	8,98*	0,87

Note. \* – the differences were significant between the second and the third stages of the pedagogical experiment,  $p < 0,05$

There were noticed statistically significant differences in almost all the parameters of physical fitness

of the persons with a moderate degree of intellectual disabilities, except for the test "Flamingo", where the index of stability on a left leg ( $x = 16,17$  sec;  $S = 1,59$ ,  $p > 0.05$ ) did not significantly change, and the equilibrium test No. 2, during which the distance of right ( $x = 23,83$  cm;  $S = 1,99$ ;  $p > 0.05$ ) and left ( $x = 23,81$  cm;  $S = 2,24$ ,  $p > 0.05$ ) hands also did not statistically significantly change (tab. 3).

This is due to the existing diseases having defeated the cerebral cortex of the brain and caused the disorder of the cerebellum which is responsible for coordination of movements.

In the final stage of the pedagogical testing of the athletes with a severe degree of intellectual disabilities there were found statistically significant differences ( $p < 0.05$ ) in the indexes of flexibility of the knee, ankle and hip joints, abdominal strength and physical performance determined by Ruffier index.

However, there were no significant changes in the studied parameters regarding left shoulder flexibility ( $x = 9.00$  cm;  $S = 0,69$ ;  $p > 0.05$ ), functional muscular strength of lower limbs ( $x = 42.22$  cm;  $S = 3,52$ ;  $p > 0.05$ ) of the athletes with a severe degree of intellectual disabilities.

Determining the level of equilibrium of the aforementioned category of persons using the test Flamingo it was found that stability indicators on the right ( $x = 11,17$  cm;  $S = 1,07$ ;  $p > 0.05$ ) and left ( $x = 7,33$  cm;  $S = 0,75$ ;  $p > 0.05$ ) legs statistically did not significantly change.

The equilibrium test No. 2 showed the same trends as the distance of right ( $x = 20,00$  cm;  $S = 1,82$ ;  $p > 0.05$ ) and left ( $x = 18.92$  cm;  $S = 1,95$ ;  $p > 0.05$ ) hands of the athletes with a severe degree of intellectual disabilities also did not statistically significantly change during the third phase of the pedagogical experiment (table. 4). This is due to the disorders and diseases they have, as well as the difficulties in the organization of the training process, which subsequently brought down the physical activity during the training sessions.

## Discussion

The analysis of the foreign literature showed (Spessato, Gabbard, & Valentini, 2013; Logan, Robinson, Webster & Rudisill, 2014) that analysis of modern approaches to organizing and conducting training sessions with the above contingent is a very relevant and modern way to improve the efficiency of the training process. There were identified the main provisions of which must be based training process for people with abnormal mental development: individual approach to training sessions; their level of physical fitness; disease features; possibilities of the contingent considering degree of abnormal mental development; age features; coaching experience; exercises, methods and forms differentiation of classes.

Thus, the implementation of the author's training program for football in a special boarding school for people with intellectual disabilities showed that the greatest increase of indexes of physical fitness was observed provided that the athletes were divided into groups depending on the degree of intellectual disabilities. During the second stage of the pedagogical experiment the athletes with intellectual disabilities fully acquired all the technical and tactical elements of the game of football provided by the program.

## Conclusions

Considering the individual characteristics of the people of this nosological group, there has been developed a training program for football, which has a variable component and is focused on people with a mild, a moderate and a severe degree of intellectual disabilities. In order to determine the specificity and focus of training sessions with the aforementioned category of persons it is necessary to take into account the peculiarities of their cognitive and motional spheres.

According to this, the individualization of the training process of athletes with intellectual disabilities in the phase of initial training involves the use of various means and methods of training, forms of organization of training sessions depending on psychological and physical disorders determined by the degree of intellectual disabilities and the peculiarities of the diseases.

The sequential pedagogical experiment showed that the implementation of the training program of Special Olympics for football to the training process of people with different degrees of intellectual disabilities allowed to improve its quality, as evidenced by the improvement of indicators of physical fitness during the second stage of the pedagogical experiment, as well as to let the representatives of this nosological group acquire the basic technical and tactical elements of football.

## Credit

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