2018
№2

Health, sport, rehabilitation

Scientific journal

on problems of physical education, sports, rehabilitation and recreation

Model characteristics of physical development, physical and technical preparedness of football players 15 years of different roles

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DOI: **http://doi.org/10.5281/zenodo.1342483**

Abstract
The purpose of the work is to develop model characteristics of physical development, physical and technical preparedness of players of 15 years of different playing roles. Material and methods. *Participants.* In the study, 47 football players took part in 15 years of the Sports School "Areal" in Kharkov. *Methods.* Analysis of scientific and methodological literature, determination of physical development indicators testing of physical and technical preparedness, methods of mathematical statistics. *The course of the study.* The results of physical development, physical and technical preparedness of football players for 15 years are fixed. Model characteristics of physical and technical preparedness of young football players are developed. Analyzed comparative characteristics of the physical and technical preparedness of players 15 years of different playing roles. Results. It is established, according to the indicators of the physical development of players, players of different playing roles practically do not differ from each other. It is shown that the goalkeepers have practically the lowest technical and physical readiness indicators practically in all test results, in contrast to the attackers, defenders and midfielders. It is recommended that the development of a program for the development of physical qualities for goalkeepers, as well as the development of a separate program for improving the technical preparedness for players of each playing role. Conclusions. It is fixed, significant differences in the level of physical and technical preparedness between field players and goalkeepers. It is established that the greatest differences between representatives of different playing roles in terms of juggling, holding the ball on the foot, accuracy and range of strikes. It was revealed, not the reliability of the difference between the indicators of physical and technical preparedness of attackers, defenders and midfielders, which indicates their universality, and, therefore, possible replacement of each other.
Key words: football, game role, model characteristics, physical readiness, technical readiness.

Анотація
Собко І.М., Козіна Ж.Л., Андрухів В.М., Сірий О.В. Модельні характеристики фізичного розвитку, фізичної та технічної підготовленості футболістів 15 років різних ігрових амплуа.
Мета роботи – розробити модельні характеристики фізичного розвитку, фізичної та технічної підготовленості футболістів 15 років різних ігрових амплуа. *Матеріал і методи. Учасники.* У дослідженні взяли участь 47 футболістів 15 років ДЮСШ «Ареал» м.Харкова. *Методи.* Аналіз науково-методичної літератури, визначення показників фізичного розвитку, тестування фізичної та технічної підготовленості, методи математичної статистики. *Хід дослідження.* Зафіксовані результати фізичного розвитку, фізичної та технічної підготовленості футболістів 15 років. Розроблено модельні характеристики фізичної і технічної підготовленості юних футболістів. Проаналізовано порівняльні характеристики особливостей фізичної і технічної підготовленості футболістів 15 років різних ігрових амплуа. Результати. Встановлено, за показниками фізичного розвитку футболістів гравці різних ігрових амплуа практично не відрізняються один від одного. Показано, що у воротарів практично за всіма результатами тестування достовірно низькі показники технічної і фізичної підготовленості, на відміну від нападників, захисників і півзахисників. Рекомендовано, розробка програми розвитку фізичних якостей для воротарів, а також розробка окремої програми вдосконалення технічної підготовленості для гравців кожного ігрового амплуа. Висновки. Зафіксовано, істотні відмінності рівня фізичної та технічної підготовленості між польовими гравцями і воротарями. Встановлено, найбільші відмінності між представниками різних ігрових амплуа в показниках жонглювання, тримання м'яча на стопі, точності і дальності ударів. Виявлено, не достовірність відмінностей між показниками фізичної і технічної підготовленості нападників, захисників і напівзахисників, що свідчить про їх універсальність, а, отже, можливої заміни один одним.
Ключові слова: футбол, ігрове амплуа, модельні характеристики, фізична підготовленість, технічна підготовленість.

Аннотация
Собко И.Н., Козина Ж.Л., Андрухив В., Серый А.В., Ахмад М. Аяз. Модельные характеристики физического развития, физической и технической подготовленности футболистов 15 лет разных игровых амплуа.
Цель работы – разработать модельные характеристики физического развития, физической и технической подготовленности футболистов 15 лет разных игровых амплуа. *Материал и методы. Участники.* В исследовании приняли участие 47 футболистов 15 лет ДЮСШ «Ареал» г. Харькова. *Методы*. Анализ научно-методической литературы, определение показателей физического развития тестирование физической и технической подготовленности, методы математической статистики. *Ход исследования.* Зафиксированы результаты физического развития, физической и технической подготовленности футболистов 15 лет. Разработаны модельные характеристики физической и технической подготовленности юных футболистов. Проанализированы сравнительные характеристики особенностей физической и технической подготовленности футболистов 15 лет разных игровых амплуа. *Результаты.* Установлено, по показателям физического развития футболистов игроки разных игровых амплуа практически не отличаются друг от друга. Показано, что у вратарей практически по всем результатам тестирования достоверно низкие показатели технической и физической подготовленности, в отличии от нападающих, защитников и полузащитников. Разработка программы развития физических качеств для вратарей, а также разработка отдельной программы совершенствования технической подготовленности для игроков каждого игрового амплуа. *Выводы.* Зафиксировано, существенные различия уровня физической и технической подготовленности между полевыми игроками и вратарями. Установлено, наибольшие различия между представителями разных игровых амплуа в показателях жонглирование, держание мяча на стопе, точности и дальности ударов. Не выявлено дстоверных различий между показателями физической и технической подготовленности нападающих, защитников и полузащитников, что свидетельствует об их универсальности, а, следовательно, возможной замены друг другом.
Ключевые слова: футбол, игровое амплуа, модельные характеристики, физическая подготовленность, техническая подготовленность.

Introduction

The problem of training young football players is now becoming increasingly relevant [16; 18; 21]. Effective functioning of the sports reserve system, improving the quality of the training process of young athletes can be ensured only with a rigorous scientific justification of the system as a whole and its individual components [12,20].

Optimum design of the technology of the training process, the formation of training programs, the selection of adequate means and methods of training and targeted recovery is possible only on the basis of taking into account the patterns of age-related development of information on the functional characteristics of athletes [10; 12].

In the literature, aspects of the problem are presented fragmentarily [1; 4] and mainly refer to qualified adult football players. At the same time, special attention should be paid to managing the development of adaptation, functional training, and optimizing the training process of young players at the stage of in-depth specialization. This is explained by the fact that this stage of long-term sports training coincides with powerful ontogenetic processes, the beginning of the manifestation of individual features of the mechanisms of regulation of functions and adaptation processes, on the basis of which, in particular, the game specialization of young players is determined [4; eleven].

Increasing the effectiveness of the training process is associated with the development and implementation of various means and methods of training athletes. One of the most effective approaches that allow to optimize the training process taking into account the development trends of a particular sport is monitoring the level of technical and physical preparedness that are an integral part of building an effective training process [5; 9; 23].

In scientific and methodical foreign and Ukrainian literature there is a lot of information about the training and competitive process of football players [3]. Researchers analyze psychophysiological possibilities, technical and tactical indicators, physical and functional preparedness of players of different qualifications [1; 15]. They develop special training programs for competitions, as well as methodological approaches aimed at improving the components of the special preparedness of high-class athletes. In the works of V.M. Kostyukevich [5] presents the structure of technical and tactical activity of qualified players of different playing roles [4]. In the works of E. Yu. Doroshenko [1] a technology was developed to improve the technical and tactical preparedness of qualified players in the microcycles of the competitive period.

Much attention is paid to the development of youth football and young football players [12; 20; 24]. The authors are looking for new ways to improve the educational and learning process of young players to improve their training, competitive and gaming activities [14,18]. So, Polevoy, G. [19] investigated the change in indicators of physical development of football players of 11-12 years old, who have different typological features of the property of the nervous system.

Scientists Khanfir, M.A. et al [16] study the effect of strength training on maximum oxygen uptake, speed, maximum strength and vertical leap in young players.

Sannicandro, I. et al [21] compare endurance, power abilities and anthropometric parameters of young players 15, 17 and 20 years, which allows to determine the content of the training process, to improve the qualities necessary for the transition to professional football.

The questions of modeling the training process of athletes in different years have been studied by many authors [2; 3; 5; 7; 10]. Scientists note that in the training process athletes use different models, which basically belong to two groups.

The first of them covers the models characterizing the structure of the competitive activity necessary to achieve a certain result; The models that characterize the main aspects of the athlete's preparedness and provide effective competitive activity; morpho-functional models reflecting the morphological features of the organism and the capabilities of individual systems and their parts that provide a certain level of preparedness and competitive activity.

The second group includes models of large structural formations of the training process - stages of long-term training, microcycles and training periods; models of training stages, meso and microcycles; models of individual training exercises and their complexes. For game sports, the problem of modeling is most acceptable in the management of the training process based on the use of both models of the first and second group models.

Therefore, the development and application of the model characteristics of the physical and technical preparedness of football players for 15 years of different playing roles, will help trainers in the preparation of training programs.

The purpose of the research is to develop model characteristics of physical development, physical and technical preparedness of football players of 15 years of different playing roles.

Material t methods

Participants. In the study, 47 players of 15 years of the Sports School "Areal" of Kharkov took

part. Of these, 11 attackers, 14 midfielders, 15 defenders and 7 goalkeepers.

Methods of research. Analysis and generalization of data from scientific and methodological literature, methods of mathematical statistics. Definition of indicators of physical development: body length was measured with a rostomer, following the standard procedure. The measurement of body weight was carried out on electronic scales "Saturn" (accuracy of measurement ± 100 g); Resting heart rate and heart rate after shuttle run. The measurement was performed using a standard medical electrocardiograph and palpation methods.

Testing physical fitness: running 15 m from the run, 30 m from the stroke and 60 m from the turn (the testing participant made a run up to 10 meters, crossed the starting line at maximum speed and overcomes the distance of 15 meters, 30 meters, 60 meters); the shuttle run time is 5-20 m.

Testing the technical preparedness: the time of holding the soccer ball on the foot (the testing participant fixed the ball on the foot and held it as long as possible); juggling, that is, the amount of filling the ball with a foot without losing; the time for performing the football according to the task (the ball was located on the line, three lines from the line at a distance of 3 m, 6 m, 9.5 m.) At the signal, the testing participant circled the pins "snake" on the right side); strikes on the gate for accuracy of hit (the gate was divided into 6 equal squares, the ball was set at a distance of 11 m.) The task of the testing participant is to hit the ball in these squares, the number of beats is 18, for one hit 1 point); ball hits on the flight range: the ball was placed on the line. The task of the testing participant is to hit the ball as far as possible. The result was fixed on the first touch of the ball to the ground.

The course of the study. The indicators of physical development, physical and technical readiness of football players of 15 years of different playing roles are fixed. Basic models of physical and technical preparedness of football players of 15 years of different playing roles are developed. Analyzed comparative characteristics of the physical and technical preparedness of young players 15 years of different playing roles.

Results

To solve the goals and objectives of the study, the most informative indicators of physical development, physical and technical preparedness were selected and basic models of physical development, physical and technical preparedness of football players of 15 years of different playing roles were developed.

Table 1

Model characteristics of physical development, physical and technical preparedness of players 15 years of different playing roles (goalkeepers, n = 7, defenders, n = 15)

Indicators	Game function	$\bar{x}$	S	m	t	p
Length of body, cm	goalkeepers	166.33	8.08	4.67	-1.61	0.17
	defenders	172.75	1.26	0.63		
Body weight, kg	goalkeepers	55.00	6.25	3.61	0.82	0.45
	defenders	52.25	2.50	1.25		
Heart rate at rest, beats·min^{-1}	goalkeepers	68.00	3.46	2.00	-0.60	0.58
	defenders	72.00	10.95	5.48		
Heart rate after shuttle. running, beats·min^{-1}	goalkeepers	132.00	6.00	3.46	-1.97	0.11
	defenders	142.50	7.55	3.77		
Shuttle run, s	goalkeepers	24.24	0.17	0.10	4.83	0.01
	defenders	23.19	0.34	0.17		
Running 30 m, s	goalkeepers	5.93	0.06	0.03	2.39	0.06
	defenders	5.49	0.31	0.16		
Running 15 m, s	goalkeepers	3.97	0.81	0.47	1.28	0.26
	defenders	3.41	0.34	0.17		
Hold the ball on the foot, s	goalkeepers	7.04	2.65	1.53	-2.68	0.04
	defenders	12.10	2.35	1.17		
Ball juggling, the number	goalkeepers	35.33	6.81	3.93	-0.43	0.69
	defenders	38.75	12.28	6.14		
Kicking the ball, s	goalkeepers	9.77	0.25	0.15	-0.08	0.94
	defenders	9.81	0.76	0.38		
Running 60 m, s	goalkeepers	8.65	0.08	0.04	-0.56	0.60
	defenders	8.28	0.46	0.23		
Strikes on goal, points	goalkeepers	6.60	0.58	0.33	-0.19	0.85
	defenders	9.00	3.59	1.80		
Blows the ball at a distance, m	goalkeepers	48.33	4.51	2.60	2.39	0.06
	defenders	41.00	3.65	1.83		

As a result of comparing the mean length and body weight of the goalkeepers, defenders, midfielders, attackers, there are no significant differences (Table 1-6).

Table 2

Model characteristics of physical development, physical and technical preparedness of players 15 years of different playing roles (goalkeepers, n = 7, midfielder, n = 14)

Indicators	Game function	$\bar{x}$	S	m	t	p
Length of body, cm	goalkeepers	166.33	8.08	4.67	-0.38	0.72
	defenders	168.20	6.10	2.73		
Body weight, kg	goalkeepers	55.00	6.25	3.61	0.11	0.92
	defenders	54.40	7.99	3.57		
Heart rate at rest, beats·min^{-1}	goalkeepers	68.00	3.46	2.00	-0.84	0.43
	defenders	70.80	5.02	2.24		
Heart rate after shuttle. running, beats·min^{-1}	goalkeepers	132.00	6.00	3.46	-2.00	0.09
	defenders	151.20	15.53	6.95		
Shuttle run, s	goalkeepers	24.24	0.17	0.10	5.30	0.00
	defenders	23.29	0.27	0.12		
Running 30 m, s	goalkeepers	5.93	0.06	0.03	2.63	0.04
	defenders	5.41	0.33	0.15		
Running 15 m, s	goalkeepers	3.97	0.81	0.47	1.23	0.27
	defenders	3.54	0.15	0.07		
Hold the ball on the foot, s	goalkeepers	7.04	2.65	1.53	-0.26	0.81
	defenders	7.36	1.03	0.46		
Ball juggling, number	goalkeepers	35.33	6.81	3.93	-1.25	0.26
	defenders	43.40	9.71	4.34		
Kicking the ball, s	goalkeepers	9.77	0.25	0.15	-0.08	0.94
	defenders	9.81	0.88	0.39		
Running 60 m, s	goalkeepers	8.65	0.08	0.04	-2.62	0.04
	defenders	8.12	0.33	0.15		
Strikes on goal, points	goalkeepers	6.60	0.58	0.33	0.76	0.48
	defenders	10.33	2.92	1.30		
Blows the ball at a distance, m	goalkeepers	35.60	4.51	2.60	4.80	0.00
	defenders	37.00	2.35	1.05		

The mean values of heart rate after shuttle run for goalkeepers of 15 years are 132 beats per minute, for defenders of 15 years - 142.5 beats·min^{-1}, midfielders 15 years - 151.2 beats·min^{-1}, attacking 15 years – 163,2 beats·min^{-1}. Differences between goalkeepers and attackers of 15 years are significant at $p < 0.05$ (Table 1-6).

We can explain the data obtained by the fact that the attackers are more emotionally reactive compared to midfielders, defenders and goalkeepers, as well as with better indicators of the shuttle race for attackers, midfielders and defenders in comparison with the goalkeepers.

The revealed regularity is also observed in the parameters of running at 60 m. The attackers, defenders and midfielders have better indicators than goalkeepers. Differences between goalkeepers and attackers of 15 years, goalkeepers and midfielders of 15 years, goalkeepers and defenders of 15 years are reliable at $p<0.05$ (Table 1-6).

The greatest differences between representatives of different playing roles are found in the indicators of technical preparedness, especially in terms of indicators of juggling, holding the ball on the foot, accuracy and range of strikes.

Thus, field players in terms of speed capabilities, in terms of technical preparedness, significantly exceed the goalkeepers. Goalkeepers, on the contrary, have lower rates of running speed. The level of speed endurance is relatively high in defenders and midfielders as opposed to goalkeepers.

Discussion

As you know, modern youth football develops by increasing the requirements for all aspects of the preparedness of young athletes [11,13,15,18,24]. In the process of competitive activity, the body is affected by significant load and duration, which require the maximum mobilization of the capabilities of the young athletes and place high demands on their preparedness. Therefore, for the proper construction of the training process, it is necessary to identify the characteristics of physical and technical preparedness of players of different playing roles [9,17].

Table 3

Model characteristics of the development, physical and technical preparedness of players 15 years of different playing roles (goalkeepers, n = 7, attacking, n = 11)

Indicators	Game function	$\bar{x}$	S	m	t	p
Length of body, cm	goalkeepers	166.33	8.08	4.67	-0.77	0.47
	forwards	170.80	7.89	3.53		
Body weight, kg	goalkeepers	55.00	6.25	3.61	0.49	0.64
	forwards	53.40	3.21	1.44		
Heart rate at rest, beats·min^{-1}	goalkeepers	68.00	3.46	2.00	-1.23	0.26
	forwards	75.60	10.04	4.49		
Heart rate after shuttle. running, beats·min^{-1}	goalkeepers	132.00	6.00	3.46	-2.88	0.03
	forwards	163.20	17.70	7.91		
Shuttle run, s	goalkeepers	24.24	0.17	0.10	4.17	0.01
	forwards	23.46	0.29	0.13		
Running 30 m, s	goalkeepers	5.93	0.06	0.03	2.63	0.04
	forwards	5.78	0.09	0.04		
Running 15 m, s	goalkeepers	3.97	0.81	0.47	0.99	0.36
	forwards	3.57	0.36	0.16		
Hold the ball on the foot, s	goalkeepers	7.04	2.65	1.53	-0.57	0.59
	forwards	8.27	3.10	1.39		
Ball juggling, number	goalkeepers	35.33	6.81	3.93	-2.52	0.05
	forwards	46.40	5.59	2.50		
Kicking the ball, s	goalkeepers	9.77	0.25	0.15	3.91	0.01
	forwards	9.06	0.24	0.11		
Running 60 m, s	goalkeepers	8.65	0.08	0.04	-0.38	0.72
	forwards	8.16	0.15	0.07		
Strikes on goal, points	goalkeepers	6.60	0.58	0.33	2.68	0.04
	forwards	10.75	2.30	1.03		
Blows the ball at a distance, m	goalkeepers	35.60	4.51	2.60	5.04	0.00
	forwards	35.60	2.79	1.25		

Table 4

Model characteristics of physical development, physical and technical preparedness of players 15 years of different playing roles (defenders, n = 15, midfielder, n = 14)

Indicators	Game function	$\bar{x}$	S	m	t	p
Length of body, cm	defenders	172.75	1.26	0.63	1.45	0.19
	midfielders	168.20	6.10	2.73		
Body weight, kg	defenders	52.25	2.50	1.25	-0.51	0.62
	midfielders	54.40	7.99	3.57		
Heart rate at rest, beats·min^{-1}	defenders	72.00	10.95	5.48	0.22	0.83
	midfielders	70.80	5.02	2.24		
Heart rate after shuttle. running, beats·min^{-1}	defenders	142.50	7.55	3.77	-1.02	0.34
	midfielders	151.20	15.53	6.95		
Shuttle run, s	defenders	23.19	0.34	0.17	-0.50	0.63
	midfielders	23.29	0.27	0.12		
Running 30 m, s	defenders	5.49	0.31	0.16	0.35	0.73
	midfielders	5.41	0.33	0.15		
Running 15 m, s	defenders	3.41	0.34	0.17	-0.76	0.47
	midfielders	3.54	0.15	0.07		
Hold the ball on the foot, s	defenders	12.10	2.35	1.17	4.10	0.01
	midfielders	7.36	1.03	0.46		
Ball juggling, number	defenders	38.75	12.28	6.14	-0.64	0.55
	midfielders	43.40	9.71	4.34		
Kicking the ball, s	defenders	9.81	0.76	0.38	-0.01	0.99
	midfielders	9.81	0.88	0.39		
Running 60 m, s	defenders	8.28	0.46	0.23	-1.40	0.21
	midfielders	8.12	0.33	0.15		
Strikes on goal, points	defenders	9.00	3.59	1.80	0.81	0.45
	midfielders	10.33	2.92	1.30		
Blows the ball at a distance, m	defenders	41.00	3.65	1.83	2.00	0.09
	midfielders	37.00	2.35	1.05		

Table 5

Model characteristics of physical development, physical and technical preparedness of players 15 years of different playing roles (defenders, n = 15, attacking, n = 11)

Indicators	Game function	$\bar{x}$	S	m	t	p
Length of body, cm	defenders	172.75	1.26	0.63	0.48	0.64
	forwards	170.80	7.89	3.53		
Body weight, kg	defenders	52.25	2.50	1.25	-0.59	0.58
	forwards	53.40	3.21	1.44		
Heart rate at rest, beats·min^{-1}	defenders	72.00	10.95	5.48	-0.51	0.62
	forwards	75.60	10.04	4.49		
Heart rate after shuttle. running, beats·min^{-1}	defenders	142.50	7.55	3.77	-2.16	0.07
	forwards	163.20	17.70	7.91		
Shuttle run, s	defenders	23.19	0.34	0.17	-1.28	0.24
	forwards	23.46	0.29	0.13		
Running 30 m, s	defenders	5.49	0.31	0.16	-2.07	0.08
	forwards	5.78	0.09	0.04		
Running 15 m, s	defenders	3.41	0.34	0.17	-0.70	0.51
	forwards	3.57	0.36	0.16		
Hold the ball on the foot, s	defenders	12.10	2.35	1.17	2.04	0.08
	forwards	8.27	3.10	1.39		
Ball juggling, the number	defenders	38.75	12.28	6.14	-1.26	0.25
	forwards	46.40	5.59	2.50		
Kicking the ball, s	defenders	9.81	0.76	0.38	2.08	0.08
	forwards	9.06	0.24	0.11		
Running 60 m, s	defenders	8.28	0.46	0.23	0.54	0.61
	forwards	8.16	0.15	0.07		
Strikes on goal, points	defenders	9.00	3.59	1.80	2.11	0.07
	forwards	10.75	2.30	1.03		
Blows the ball at a distance, m	defenders	37.00	3.65	1.83	2.52	0.04
	forwards	35.60	2.79	1.25		

Table 6

Model characteristics of physical development, physical and technical preparedness of players 15 years of different playing roles (midfielders, n = 14, attacking, n = 11)

Indicators	Game function	$\bar{x}$	S	m	t	p
Length of body, cm	midfielders	168.20	6.10	2.73	-0.58	0.58
	forwards	170.80	7.89	3.53		
Body weight, kg	midfielders	54.40	7.99	3.57	0.26	0.80
	forwards	53.40	3.21	1.44		
Heart rate at rest, beats·min^{-1}	midfielders	70.80	5.02	2.24	-0.96	0.37
	forwards	75.60	10.04	4.49		
Heart rate after shuttle. running, beats·min^{-1}	midfielders	151.20	15.53	6.95	-1.14	0.29
	forwards	163.20	17.70	7.91		
Shuttle run, s	midfielders	23.29	0.27	0.12	-0.93	0.38
	forwards	23.46	0.29	0.13		
Running 30 m, s	midfielders	5.41	0.33	0.15	-2.45	0.04
	forwards	5.78	0.09	0.04		
Running 15 m, s	midfielders	3.54	0.15	0.07	-0.21	0.84
	forwards	3.57	0.36	0.16		
Hold the ball on the foot, s	midfielders	7.36	1.03	0.46	-0.62	0.55
	forwards	8.27	3.10	1.39		
Ball juggling, the number	midfielders	43.40	9.71	4.34	-0.60	0.57
	forwards	46.40	5.59	2.50		
Kicking the ball, s	midfielders	9.81	0.88	0.39	1.83	0.11
	forwards	9.06	0.24	0.11		
Running 60 m, s	midfielders	8.12	0.33	0.15	2.99	0.02
	forwards	8.16	0.15	0.07		
Strikes on goal, points	midfielders	10.33	2.92	1.30	1.45	0.19
	forwards	10.75	2.30	1.03		
Blows the ball at a distance, m	midfielders	37.00	2.35	1.05	0.86	0.42
	forwards	35.60	2.79	1.25		

The results of our study complement the results of V.M. Kostyukevich (2009), G.A. Lisenchuk (2010) who believe that in the training of players of this age, the coach needs to take into account their morpho-functional capabilities [4,6]. Comparing the indicators of the physical development of players, you can see that these parameters players of different playing roles do not practically differ from each other. The obtained data are somewhat divergent from the results of the studies of other authors [6-8], who determined that the goalkeeper has the greatest mass and body length. These differences with the results of other authors, we can explain the low experience of football by the children surveyed and the need to improve the system of distribution of players by function.

In football, as in other sports games, each game position makes certain demands on the level of manifestation of the various qualities and properties of athletes, which must be taken into account when evaluating them [20]. Therefore, in our study, we compared players of different game roles to each other. It was revealed that the goalkeepers had practically the lowest technical and physical readiness for practically all test results, in contrast to attackers, defenders and midfielders. We explain this by the fact that the goalkeeper is a highly specialized player of defense and trains on a separate program. As a result of comparison of most indicators of physical and technical preparedness of attackers, defenders and midfielders, no significant differences were found. This is due to the fact that in the training process the coach quite often changes the playing role of young athletes, in order to learn and find the optimal playing role for each player, depending on the competition period. After all, the main feature of adolescence is associated with the process of puberty, resulting in significant changes in the psyche, high emotionality, unbalanced mood, exasperation, exaggeration of their capabilities. Very often the manifestation of the so-called feeling of adulthood is reflected in the behavior of players in the game. At the same time, the body of adolescents quickly adjusts to work and easily rebuilds to another type of activity, which is explained by the great mobility of the nervous processes [19]. Therefore, in the practical work of the coach, players actively put players 15 years in different zones of the playing field, thereby teaching them the specifics of different playing roles.

Thus, when choosing training loads for goalkeepers, trainers need to take into account the obtained data, which will allow developing optimal programs for the development of jumping, speed, strength, agility, and for improving technical skill. When selecting funds for the training process of representatives of the remaining playing roles, it is necessary to pay special attention to the performance of technical methods for players of 15 years.

Conclusions

1. It is fixed, significant differences in the level of physical and technical preparedness between field players and goalkeepers.

2. It is established, the greatest differences between representatives of different playing roles in terms of juggling, holding the ball on the foot, accuracy and range of strikes.

3. It is revealed, not the reliability of the difference between the indicators of physical and technical preparedness of attackers, defenders and midfielders, which indicates their universality, and, therefore, possible replacement of each other.

Acknowledgements

The study was conducted in accordance with:

• "Consolidated plan of scientific research work in the field of physical culture and sports for 2011-2015" on topic 2.4 "Theoretical and methodological foundations of individualization in physical education and sport" (State Registration No. 0112U002001)

• research work, which was financed from the state budget of the Ministry of Education and Science of Ukraine for 2013-2014. "Teoretikal-methodical bases of application of information, pedagogical and medico-biological technologies for formation of a healthy way of life" (State registration number 0113U002003)

• research work that finances from the state budget of the Ministry of Education and Science of Ukraine for 2015-2016. "Teoretikal-methodical bases of application of means of information, pedagogical, medical and biological orientation for motor and spiritual development and formation of a healthy way of life" (State registration number 0115U004036)

• research work financed from the state budget of the Ministry of Education and Science of Ukraine for 2017-2018. "Teoretikal-methodical bases of application of information, medico-biological and pedagogical technologies for realization of individual physical, intellectual and spiritual potential and formation of a healthy way of life" (State registration number 0117U000650).

Conference of interests

The authors state that there is no conflict of interest.

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Принята в редакцию 16.06.2018

Received: 16.06.2018