



CONTENT AND STRUCTURE OF COMPETITIVE ACTIVITIES OF YOUNG BASKETBALL PLAYERS AGED 13-14

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Abstract

The study purpose was to determine the technical-and-tactical indicators of young basketball players aged 13-14 in the process of competitions and to develop recommendations for assessing the competitive activities of young basketball players.

Materials and methods. The study used the method of pedagogical observations during competitions with recording in a specially developed protocol the following indicators of competitive activity of young basketball players: throws to the basket in motion, two- and three-point throws, free throws, quick breakthrough, positional attack, struggle for rebounding the ball, interception of the ball, "goal assists", technical errors, and other losses of the ball.

Results. As shown by the results of studies of such a technical indicator as throwing the ball into the basket in motion, young basketball players aged 13-14 have the highest accuracy in hitting the basket in this technique of the game – 49.1%. Moreover, the hit percentage (51.6) is higher in the first half of the game than in the second half (46.6) with a high significance level of the difference ($p > 0.99$). A similar situation is observed when making two- and three-point shots from the distance. Studies of the effectiveness of free throws have shown that, on average, basketball players aged 13-14 make 14.1 free throws, of which 7.1 hit, which is 52.2%. Studies have shown that the number of quick breakouts averages 8.45 per game (5.18 in the first half and 3.27 in the second half). The number of possessions of the ball in the fight for the rebound on own backboard is 14.9 times, and on the opponent's backboard – 13.36. The average number of "goal assists" per game is 4.36, ball interceptions – 8.18, technical errors – 15, and other ball losses – 9.54.

Conclusions. Studies of technical-and-tactical indicators of young basketball players during competitions have shown that their role is underestimated in the practice of training young basketball players. The training programs for basic training groups (aged 13-14) shall include in full all technical-and-tactical indicators, and especially throws in motion from under the backboard, two- and three-point shots, "goal assists", free throws, ball losses, interceptions, block shots, struggle for rebound, indicators in a quick breakthrough and in a positional attack, the number of points conceded, etc. It should be noted that there is a higher number of technical-and-tactical indicators in the first half of the game, compared to the second half, with a high significance level of the difference between the indicators. This indicates the growing fatigue of young basketball players and the need to find ways to improve the system of training speed endurance and throwing techniques in a state of fatigue.

Keywords: basketball, technical-and-tactical indicators of young basketball players.

Introduction

Problem statement and analysis of recent research and publications.

In modern basketball, high demands are placed on players not only in terms of physical fitness, which is an important factor itself, but also in terms of their technical

and tactical training. (Gonzalo-Skok, Sánchez-Sabaté, Izquierdo-Lupón, & Sáez de Villarreal, 2019; Adigüzel & Günau, 2016; Kondrashin & Koryahin, 1978).

The technical-and-tactical preparedness of basketball players in modern basketball is of great importance due to the increase in loads during the game (Koryahin, 2022; Ben Abdelkrim, Castagna, El Fazaa, & El Ati, 2010; Sushko & Mustafa, 2015).

In order to effectively improve the technical-and-tactical preparedness of basketball players, it is necessary to

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know the requirements that the game itself imposes on them (Mitova & Ivchenko, 2015; Sushko, 2017; Koryahin, 2018).

Without a sufficient level of technical-and-tactical fitness based on good physical fitness, it is impossible to ensure a high level of performance during the game (Asadi, 2013; Raiola et al., 2016; Ferreira, Volossovitch, & Sampaio, 2014).

Materials and methods

Study participants and study organization

The research was conducted at the Championship of Ukraine. 29 teams participating in the Ukrainian championship aged 13-14 took part in the research.

The study was conducted in accordance with the ethical principles of the Helsinki Declaration for human research and was approved by the Research Ethics Committee of the Lviv Polytechnic National University.

During the competition, the following indicators were recorded into a specially developed protocol: throws to the basket in motion, two- and three-point shots from the distance, free throws, quick breakthrough, positional attack, struggle for rebounding the ball, interception of the ball, "goal assists", technical errors, other losses of the ball.

Statistical analysis

To keep a log, to perform operations on sorting the obtained research results and storing them, MS Excel was used to calculate statistical data. The choice of methods of mathematical statistics was adequate to the goals and objectives of our research and included the use of the following methods: arithmetic mean according to primary data, average value error and reliability of the difference between the data obtained.

Results

The results of studies of technical-and-tactical indicators of young basketball players aged 13-14 are given in tables 1-3.

The results of the technical-and-tactical indicators of young basketball players aged 13-14 are of particular importance, because in programs for sports schools, the main indicators of competitive activity are offered only for older boys. The program for the age of 13-14 years gives regulatory requirements only for physical, technical training and growth indicators. At the same time, it is known that the principle of complexity is the methodological basis for assessing preparedness in sports games. The importance of such an assessment increases when the level of physical and technical preparedness is compared with the indicators of competitive activity of basketball players.

As shown by the results of studies of such a technical indicator as throwing the ball into the basket (Table 1), young basketball players aged 13-14 have the highest accuracy of hitting in throws in motion from under the shield – 49.1%. Moreover, in the first half of the game, the percentage of hits in these throws is higher (51.6) than in the second (46.6) with a high degree of reliability of the difference ($p>0.99$). A similar situation is observed in two- and three-point shots from the distance. When making two-point shots, the percentage of hits in the first half of the game was 43.4, in the second half – 38.5 ($p>0.999$). With three-point shots, the hit percentage in the first half of the game is significantly higher (33.6) than in the second half (20.7) ($p>0.999$). It was established that in all types of shots recorded – in movement from under the shield, two-point

Table 2. Reliability of differences in technical indicators in the first and second half of the game for young basketball players aged 13-14 during the competition

Indicators	Half the game	Number
Throws in motion after 2 steps	$p<0,95$	$p>0,99$
Two-point shots	$p>0,99$	$p>0,999$
Three-point shots	$p<0,95$	$p>0,999$
Free throws	$p<0,95$	$p<0,95$

Source: prepared by the author

Table 1. The results of studies of technical indicators (throwing the ball into the basket) of young basketball players 13-14 years old

Indicators	Half the game	Number of throws	Number of hits	Hits percentage
		$\bar{X}\pm m; s$	$\bar{X}\pm m; s$	$\bar{X}\pm m; s$
Throws in motion after 2 steps	I-a	7.2±1.8; 2.84	3.9±1.3; 2.20	51.6±10.4; 15.7
	II-a	6.9±1.04; 1.57	3.2±0.83; 1.26	46.6±9.63; 14.5
	Total	14.4±2.29; 3.46	7.1±1.04; 1.57	49.1±9.63; 14.5
Two-point shots	I-a	14.1±1.25; 1.89	5.3±0.83; 1.26	43.4±5.64; 8.5
	II-a	15.3±1.67; 2.52	6.5±1.04; 1.57	38.5±4.18; 6.3
	Total	29.4±2.71; 4.09	10.9±1.67; 2.52	40.8±3.55; 5.35
Three-point shots	I-a	3.5±0.62; 0.94	1.1±0.41; 0.63	33.6±3.55; 5.35
	II-a	3.1±0.62; 0.94	0.8±0.2; 1.89	20.7±3.55; 5.35
	Total	6.6±0.62; 0.94	1.9±0.41; 0.63	26.0±3.55; 5.35
Total two-point and three-point shots	I-a	17.0±2.09; 3.15	6.2±1.2; 1.89	36.5±6.06; 9.13
	II-a	17.8±1.88; 2.83	6.3±1.04; 1.57	35.4±4.39; 6.61
	Total	34.8±2.09; 3.15	12.04±1.67; 2.52	35.8±3.97; 5.98
Free throws	I-a	6.2±1.67; 2.52	3.2±1.04; 1.57	50.4±8.77; 13.2
	II-a	7.6±2.09; 3.15	3.9±0.83; 1.26	54.1±7.31; 11.0
	Total	14.1±2.71; 4.09	7.1±1.46; 2.2	52.2±8.77; 13.2

Source: prepared by the author

and especially three-point from the distance in the first half, the percentage of hitting is higher than in the second with a high degree of reliability of the difference (Table 2).

This is due to the growing fatigue of young basketball players and confirms the conclusion made analyzing the level of development of speed endurance in basketball players aged 13-14 that this level is low, and it is necessary to look for ways to improve the system of training speed endurance and throwing techniques in a state of fatigue in young basketball players.

Overall, the percentage of all types of throws hit by young basketball players aged 13-14 during the game averaged 33.4, which is close to the test figures.

Of particular interest are free throws. Studies have shown that, on average, basketball players 13-14 years old make 14.1 free throws, of which 7.1 hit, which is 52.2%.

Of great importance in the theory and practice of basketball is the recording of such technical-and-tactical indicators as a quick breakthrough, its effectiveness, the struggle for rebounds, the effectiveness of an attack under the shield, interception, loss of the ball and others.

Studies (Table 3) have shown that young basketball players aged 13-14 have an average of 8.45 per game (5.18

in the first half, 9.27 in the second). The number of ball possessions in the fight for rebound averages 14.9 times during the game on your shield, and 13.36 times on the opponent's shield. "Goal" assists averaged 4.36 per game, ball interceptions – 8.18. However, at this age, a large number of technical errors were recorded during the game – 15, other ball losses – 9.54. All this indicates an insufficient level of technical preparedness of young basketball players, on the one hand, and on the other – this indicates the need to introduce into the educational programs all technical-and-tactical indicators for all age groups participating in sports competitions.

Discussion

The problem of the system of training young basketball players has been studied by many coaches and scientists (Raiola, Altavilla, Tafuri, & Lipoma, 2016; Montgomery, Pyne, & Minahan, 2010; Koryahin et al., 2022).

The results of our research are consistent with the scientific research of many specialists and scientists (Demcenco, 2017; Khudolii, 2019; Tyshchenko, Hnatchuk, Pasichnyk, Bubela, & Semeryak, 2018) on the feasibility of improving the training system for young athletes, in particular, basketball players. In the practice of training young basketball players, the role of technical-and-tactical indicators is underestimated. We believe that our research has fully proved the need to include in the training programs in full all technical-and-tactical indicators, and especially throws to the basket in motion from under the shield, two- and three-point throws, "goal" assists, free throws, ball losses, interceptions, block shots, fight for rebound, indicators in a quick breakthrough and in a positional attack, the number of points conceded, etc.

Training programs (Poplavskiy, Maslova, Bezmylov, Mitova, Murzin, & Chetvertak, 2019) contain only recommendations on the amount of competitive training (number of competitive games / matches), assessment of the level of physical development, assessment of the physical and technical preparedness of young basketball players for enrollment and transfer to groups of basic and special training. The technical-and-tactical actions of basketball players are given in the model indicators of the effectiveness of the implementation of technical-and-tactical actions of highly qualified basketball players.

Obviously, the training programs should provide indicators of throwing accuracy not only for highly qualified basketball players, but also for other age groups, in particular for basketball players aged 13-14. Here it is also necessary to take into account, based on the results of research, the need to differentiate program standards for throws of a different nature to throws from under the ring, the rest of two-point throws and three-point throws. It should be borne in mind that it is necessary to introduce program standards in the halves of the game, since our studies have shown that the percentage of hits in the 1st and 2nd halves of the game has a significant reliable difference.

The need to improve the structure and content of the educational training process of young basketball players was pointed out in their works by a number of specialists (Onyshenko, 2017; Tymoshenko, 1999; Mitova & Ivchenko, 2014).

The results of our research complement the data on the state of training of young basketball players aged 13-14 and

Table 3. The results of studies of technical-and-tactical indicators of young basketball players aged 13-14

Indicators	Half the game	Number
		X±m; s
Quick breakthrough	I-a	5.18±1.08; 1.57
	II-a	3.27±0.87; 1.26
	Total	8.45±1.96; 2.83
Positional attack	I-a	12.27±1.96; 2.83
	II-a	9.27±1.74; 2.52
	Total	21.54±3.27; 4.72
Fight for rebound, your shield	I-a	7.81±1.74; 1.42
	II-a	7.09±1.08; 1.57
	Total	14.9±1.52; 2.2
Fight for rebound, opponent's shield	I-a	6.63±0.87; 1.26
	II-a	5.81±1.08; 1.57
	Total	13.36±1.74; 2.52
Interception of the ball	I-a	4.54±0.87; 1.26
	II-a	3.63±1.08; 1.57
	Total	8.18±1.74; 2.52
Goal assists	I-a	2.09±0.65; 0.94
	II-a	2.27±0.65; 0.94
	Total	4.36±1.08; 1.57
Technical errors	I-a	7.18±1.61; 2.83
	II-a	7.81±1.31; 1.89
	Total	15.0±3.49; 5.04
Other losses	I-a	5.63±1.74; 2.52
	II-a	3.9±0.87; 1.26
	Total	9.54±1.52; 2.2

Source: prepared by the author

the need to improve curricula for children's and youth sports schools.

Conclusions

Studies of technical-and-tactical indicators in young basketball players during the competition have shown that their role is underestimated in the practice of training young basketball players. In the training programs for basic training groups (13-14 years old), it is necessary to include in full all technical-and-tactical indicators, and especially throws in motion from under the shield, two- and three-point, "goal" assists, free throws, ball losses, interceptions, block shots, struggle for rebound, indicators in a quick breakthrough and in a positional attack, the number of points conceded, etc. It should be noted that there is a higher level of technical-and-tactical indicators in the first half of the game, compared to the second half, with a high level of reliability of the difference between the indicators. This indicates the growing fatigue of young basketball players and the need to find ways to improve the system of training speed endurance and throwing techniques in a state of fatigue.

Conflict of interest.

The authors declare no conflict of interest.

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ЗМІСТ ТА СТРУКТУРА ЗМАГАЛЬНОЇ ДІЯЛЬНОСТІ ЮНИХ БАСКЕТБОЛІСТІВ 13-14 РОКІВ

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Авторський вклад: А – дизайн дослідження; В – збір даних; С – статаналіз; D – підготовка рукопису; Е – збір коштів

Реферат. Стаття: 5 с., 3 табл., 21 джерел.

Мета дослідження – визначення техніко-тактичних показників юних баскетболістів 13-14 років у процесі змагань і розробка рекомендацій з оцінки змагальної діяльності юних баскетболістів.

Матеріали та методи. У дослідженні був використаний метод педагогічних спостережень під час змагань із занесенням у спеціально розроблений протокол наступних показників змагальної діяльності юних баскетболістів, а саме: кидки у кошик у русі, дво- і тричочкові кидки, штрафні кидки, швидкий прорив, позиційний напад, боротьба за відскок м'яча, перехоплення м'яча, «гольові передачі», технічні помилки, інші втрати м'яча.

Результати. Як показали результати досліджень такого технічного показника, як кидок м'яча у кошик у русі, юні баскетболісти 13-14 років мають саму високу точність попадання в цьому прийомі техніки гри – 49.1%. Причому, в першій половині гри процент влучення (51.6) вище, ніж у другій (46.6) при високому ступені достовірності різниці ($p > 0.99$). Аналогічна ситуація спостерігається й під час виконання дво- і тричочкових кидків з дистанції. Дослідження результативності штрафних кидків показали, що в середньому за гру баскетболісти 13-14 років виконують 14.1 штрафних кидків, з яких влучають 7.1, що становить 52.2 %. Дослідження показали, що кількість швидких проривів складає в середньому за гру 8.45 (в першій половині – 5.18, у другій – 3.27). Кількість оволодіння м'ячем у боротьбі за відскок на своєму щиті 14.9 разів, а на щиті суперника – 13.36. «Гольових» передач в середньому за гру – 4.36, перехоплень м'яча – 8.18, технічних помилок – 15, інших втрат м'яча – 9.54.

Висновки. Дослідження техніко-тактичних показників у юних баскетболістів в процесі змагань показали, що в практиці підготовки юних баскетболістів недооцінюється їхня роль. В навчальні програми необхідно включити в повному обсязі всі техніко-тактичні показники, а особливо кидки в русі з-під щита, дво- і тричочкові, «гольові» передачі, штрафні кидки, втрати м'яча, перехоплення, блок-шоти, боротьба за відскок, показники у швидкому прориві і в позиційному нападі, кількість пропущених очок тощо.

Ключові слова: баскетбол, техніко-тактичні показники юних баскетболістів.

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