

The analysis of efficiency of tactics of personal defense in basketball

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Purpose: to define the efficiency of a game of the men's basketball team of high qualification with the use of personal defense.

Material & Methods: games of the men's team of the Superleague "Khimik" of Yuzhnyi are considered. 3 seasons were researched: 2013/2014, 2014/2015, 2015/2016. Methods were used: analysis and synthesis of data of scientific and methodical literature, pedagogical supervision, comparative analysis, methods of mathematical statistics.

Results: the comparison of average indicators of number of technical and tactical actions in defense of the team "Khimik" (rebound, steal) in three seasons is carried out. The analysis of turn overs in offense by teams – competitors of the team "Khimik" is carried out. The analysis of data of accuracy of shots against personal defense of the team "Khimik" is carried out.

Conclusions: the defensive play of the team "Khimik" helps them to achieve the high purposes in the championship of Ukraine and the Cup of Ukraine, and also to show their skill on the European arena.

Keywords: basketball, zone defense, rebounds, steals, shots.

Introduction

Tactical preparation of teams, which take part in competitions of high level, has to be adapted in the team line-up, features of its working capacity and tasks, which the team will solve in these competitions. Various options of tactical actions in attack and defense have to be in the inventory at such teams.

Active defense has to become the main means of fight for initiative in a game. According to many experts [1; 2; 3; 4], active defense – is the base of the progress of basketball. The emphasis of a coach on a play in defense helps even a team of middle class to play well. Mistakes in personal defense define by unsuccessful actions of specific players who can be replaced with bench-warmers. Much attention is paid to different options of defense in tactical preparation in teams of high level.

Communication of the research with scientific programs, plans, subjects

The research was conducted according to the plan of RW of KhSAPC 2.8 "Definition of influence of different exercise stresses on the accuracy of performance of movements" (the state registration number is 0111U003127).

Purpose of the research

To define the efficiency of use of personal defense in the game of the basketball men's teams of high qualification.

Material and Methods of the research

The game of the men's team of the Superleague "Khimik" of Yuzhnyi is considered. 3 seasons were researched: 2013/2014, 2014/2015, 2015/2016. Methods were used: analysis and

synthesis of data of scientifically methodical literature, pedagogical supervision, comparative analysis, methods of mathematical statistics.

Results of the research and their discussion

The comparative analysis of efficiency of technical and tactical actions in defense

The analysis of tactical actions of the team "Khimik" showed that the team uses personal defense in defense. Such tactical actions as rebounds in defense, which recoiled after not miss shot of the player of competitors, and steals, which can take place at performance by the rival of dribble or pass, are indicators of active and effective defense of the team? All these actions can happen during the performance of team counteractions in personal defense.

The analysis of videos of games showed that the team used only personal defense unlike season 2013/2014 in seasons 2014/2015 and 2015/2016, for this reason the received statistics of season 2013/2014 for bigger reliability are listed for 40 minutes of playing time according to expression:

$$k_i = \frac{40p_i}{\Delta t_i},$$

where k_i – indicator of quantity corresponding technical and tactical actions during 40 min, p_i – the number of the corresponding technical and tactical actions, Δt_i – period during which the relevant system of defense was used.

Indicators of technical and tactical actions in defense of players of the team "Khimik" 2013/2014 are displayed in tab. 1. Respectively indicators in the season 2014/2015 are displayed in tab. 2, and in tab. 3 – the season 2015/2016.

The analysis of indicators of TTA for three seasons, which are given in the tables 1–3, showed that the greatest number of rebounds of the team “Khimik” made in season 2013/2014 against the team “Dnipro Azot” – 40 rebounds. The smallest quantity of rebounds – 18 – was made in the season 2014/2015 twice in games with the teams BC “Kyiv” and “Budivelnik”.

Analyzing indicators of games with different competitors, we will note that the team “Khimik” made the maximum number of steals in the season 2014/2015 against the team “Dnipro” – 15 times. The minimum quantity of steals was recorded in the game with the team “Zaporizhzhia” – 4 times.

The comparative analysis of indicators of technical and tactical actions for three seasons (tab. 4) shows what the greatest average indicator of quantity of rebounds was reached by the team “Khimik” in the season 2013/2014 – $32,62 \pm 1,01$ times, it 7,62 times more, than in the season 2014/2015, and 5,5 times more, than in the season 2015/2016. The difference of indicators of quantity of rebounds between the seasons 2013/2014 and 2014/2015 and between the seasons 2013/2014 and 2015/2016 can be considered reliable unlike difference between the seasons 2014/2015 and 2015/2016.

The difference of indicators of number of steals was reliable only between the seasons 2013/2014 and 2014/2015, it made 3,88 times. The greatest average indicator of steals was established in the season 2014/2015, it equaled $10,50 \pm 1,08$ times for the game that is 2 times more, than in the season 2015/2016, but this difference, as well as difference, between the seasons 2013/2014 and 2015/2016 which made 1,88 times, is not reliable.

Analysis of technical and tactical actions of offense against personal defense of the team “Khimik”

Indicators of low productivity of passes from the game of the team-competitor, which encounters resistance in the form of personal or zone position defense, and turn overs, under pressure of the same kinds of defense can be the characteristic of effective defense also. We registered these indicators in pedagogical supervision for this reason. Each of offenses of competitors had to be carried out against position defense by means of which the team “Khimik” counteracted offenses to the basket. We registered in the protocol of supervision how attack in offense has come to the end: well-aimed or miss shot (two-or three-point), turn over under the pressure of defense or unconstrained turn over in offense as a result of uncoordinated actions of the players. After the data recording of each game, we counted percent of hits of teams of offense in close and middle shots (2-point shots), in shots from three-point shot (3-point throws), also separate results counted also in turn overs.

Receiving these results, in our opinion, has to give the evident picture of productivity of technical and tactical actions not only teams of offense which puts all efforts on overcoming of the system of defense of the competitor with the end of this game, positive for itself. We will be able to draw conclusions concerning productivity of the defensive play of the team “Khimik”, through the data of accuracy and the number of turn overs of the team of offense against personal defense.

Indicators of technical and tactical actions of offense against

personal defense of the team “Khimik” 2013/2014 displayed in tab. 5. Respectively indicators in the season 2014/2015 are displayed in tab. 6, and in tab. 7 – the season 2015/2016.

Having analyzed the percent of hits of 2-point shots of teams – competitors BC “Khimik”, we see that the team players of BC “Kyiv” in the season 2013/2014 which in 58,3% struck a ring of BC “Khimik”, were the most well-aimed. Whereas the team “Dnipro Azot” has got only 30% of two-point shots in the season 2014/2015.

The most successful defense against 3-point shots of the team BC “Khimik” was in the play with the team “Kryvbas” in the season 2015/2016, opponents managed to realize only 12%, and the greatest percent 3-point hits against defense of the team BC “Khimik” was shown by the team “Budivelnik”, namely – 43,5 percent.

Analyzing each game separately, it was established that the greatest number of turn overs against the team “Khimik” is made the team “Lviv” – 28 times. The smallest number of turn overs was recorded in the game with the team “Zaporizhzhia” – 7 times.

Comparison of indicators of technical and tactical actions of opposing teams against personal defense of the team “Khimik” (tab. 8) shows that average indicator of two-point hits in the season 2013/2014 made $49,57 \pm 1,61\%$, it is only 1,57% more, than in the season 2015/2016, but much more, than in the season 2014/2015 (3,5%), the difference between the seasons 2014/2015 and 2015/2016 made 1,93%. Any of these differences is not reliable.

Studying the accuracy of three-point shots, we can claim that teams –competitors of BC “Khimik” were the most well-aimed in the season 2013/2014, the percent of their hits made $27,85 \pm 1,59\%$, it is 1,13% more, than in the season 2014/2015, and the difference with the season 2015/2016 makes 0,85%, the difference between the seasons 2014/2015 and 2015/2016 made 0,28%. Any of these differences is not reliable.

Therefore the reliable difference between indicators of number of turn overs wasn't established. The greatest average indicator of number of turn overs of teams-competitors was reached in the season 2014/2015 – $18,62 \pm 1,70$ times whereas in the season 2013/2014 this indicator made $15,5 \pm 1,21$ times, it is 3,12 times less, than in the season 2013/2014, and 0,63 times more, than in the season 2015/2016, namely – $14,87 \pm 1,85$ times.

Conclusions

1. Having made the analysis of defense team actions of the team “Khimik” we came to conclusion that the team gives considerable advantage to personal position defense.
2. The analysis of statistical data of the defensive play of the team “Khimik” showed that the greatest average indicator of quantity of rebounds was reached by the team “Khimik” in the season 2013/2014 – $32,62 \pm 1,01$ times, it 7,62 times more, than in the season 2014/2015 and 5,5 times more, than in the season 2015/2016; difference of indicators of quantity of rebounds between the seasons 2013/2014 and 2014/2015 and between the seasons 2013/2014 and 2015/2016, it is possi-

Table 1
Indicators of technical and tactical actions of the team “Khimik” in the season 2013/2014 (quantity)

TTA	Teams- competitors in the season 2013/2014							
	Odesa	Dnipro -Azot	BC Kyiv	Budivelnyk	Hoverla	Lviv	Mykolayiv	Dnipro
Rebounds	36	40	27	32	34	35	34	33
Steals	4	9	4	7	8	8	7	6

Table 2
Indicator of technical and tactical actions of the team “Khimik” in the season 2014/2015 (quantity)

TTA	Teams- competitors in the season 2014/2015							
	Odesa	Dnipro -Azot	BC Kyiv	Budivelnyk	Hoverla	Lviv	Mykolayiv	Dnipro
Rebounds	27	30	18	18	22	26	31	28
Steals	11	13	8	8	8	13	8	15

Table 3
Indicator of technical and tactical actions of the team “Khimik” in the season 2015/2016 (quantity)

TTA	Teams-competitors in the season 2015/2016							
	Cherkaski Mavpy	OBC Bipa	Kryvbas	Zaporizhzhya	Mykolayiv	Cherkaski Mavpy	Dynamo	Kryvbas
Rebounds	29	28	23	28	23	30	30	26
Steals	7	13	10	4	7	5	9	13

Table 4
Comparisons of quantitative indices of technical and tactical actions of the team “Khimik” in personal defense in three seasons

TTA	2013/2014	2014/2015	2015/2016	$t_{1,2}$	$t_{1,3}$	$t_{2,3}$
	$\bar{X} \pm m$					
Rebounds	32,62±1,01	25,00±1,92	27,12±1,07	3,43; p<0,05	3,56; p<0,05	0,96; p>0,05
Steals	6,62±0,69	10,50±1,08	8,5±1,27	3,00; p<0,05	1,29; p>0,05	0,96; p>0,05

Table 5
Indicators of technical and tactical actions of offense of teams – competitors of BC “Khimik” in the season 2013/2014

TTA	Odesa	Dnipro -Azot	BC Kyiv	Budivelnyk	Hoverla	Lviv	Mykolayiv	Dnipro
2-point shots, %	52,0	50,0	58,3	50,0	47,1	44,4	48,6	46,2
3- point shots, %	33,0	22,0	30,0	33,0	27,3	25,0	23,1	29,4
Turn overs	11	21	12	14	16	18	16	16

Table 6
Indicators of technical and tactical actions of offense of teams – competitors of BC “Khimik” in the season 2014/2015

TTA	Odesa	Dnipro -Azot	BC Kyiv	Budivelnyk	Hoverla	Lviv	Mykolayiv	Dnipro
2-point shots, %	39,5	30,0	46,5	70,0	56,1	42,9	36,4	47,2
3- point shots, %	35,7	15,0	35,0	43,5	14,3	26,1	19,2	25,0
Turn overs	19	21	13	17	18	28	15	18

Table 7
Indicators of technical and tactical actions of offense of teams – competitors of BC “Khimik” in the season 2015/2016

TTA	Cherkaski Mavpy	OBC Bipa	Kryvbas	Zaporizhzhya	Mykolayiv	Cherkaski Mavpy	Dynamo	Kryvbas
2-point shots, %	43,0	45,0	58,0	46,0	49,0	46,0	47,0	50,0
3- point shots, %	26,0	25,0	12,0	29,0	33,0	39,0	33,0	19,0
Turn overs	17	19	21	7	11	10	17	17

Comparisons of indicators of technical and tactical actions of opposing teams against personal defense of the team "Khimik" in three seasons

TTA	2013/2014	2014/2015	2015/2016	$t_{1,2}$	$t_{1,3}$	$t_{2,3}$
	$\bar{X} \pm m$					
2-point shots, %	49,57±1,61	46,07±4,69	48,0±1,73	0,71; $p > 0,05$	0,66; $p > 0,05$	0,38; $p > 0,05$
3- point shots, %	27,85±1,59	26,72±3,99	27,0±3,23	0,26; $p > 0,05$	0,24; $p > 0,05$	0,05; $p > 0,05$
Turn overs	15,5±1,21	18,62±1,70	14,87±1,85	1,50; $p > 0,05$	0,28; $p > 0,05$	1,49; $p > 0,05$

ble to consider reliable unlike difference between the seasons 2014/2015 and 2015/2016.

3. The difference of indicators of number of steals was reliable only between the seasons 2013/2014 and 2014/2015, it made 3,88 times. The greatest average indicator of steals was established in the season 2014/2015, where it equaled 10,50±1,08 times for the game that is 2 times more, than in the season 2015/2016, but this difference, as well as difference, between the seasons 2013/2014 and 2015/2016 which made 1,88 times, is not reliable.

4. The average indicator of two-point hits in the season 2013/2014 made 49,57±1,61%, it is only 1,57% more, than in the season 2015/2016, but much more, than in the season 2014/2015 (3,5%), the difference between the seasons 2014/2015 and 2015/2016 made 1,93%. Any of these differences is not reliable.

5. The analysis of percent of hits of three-point shots of teams – competitors of BC «Khimik» showed that percent of their hits made 27,85±1,59%, in the season 2013/2014, it is 1,13% more, than in the season 2014/2015, and the difference with the season 2015/2016 makes 0,85%, the difference between the seasons 2014/2015 and 2015/2016 made 0,28%. Any of these differences is not reliable.

6. Summing up the results of researches, we can note that defensive play of the team "Khimik" helps them to achieve the highest aims in the Championship of Ukraine and the Cup of Ukraine, and also to show their skill on the European arena.

Prospects of the subsequent researches. The research of efficiency of tactics of other types of defense in basketball teams of the Superleague is planned.

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