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COMPARATIVE ANALYSIS OF EFFICIENCY OF COMPETITION ACTIVITY OF MEN'S AND WOMAN'S BASKET-BALL TEAMS OF HIGH QUALIFICATION

Abstract. Purpose: to expose the specific lines of competition activity and define differences in realization of technique-tactical actions the basketball-players of high class who playing in woman's and men's national teams. **Material and Methods:** for determination of characteristic features of competition activity of men's and women's, there was the analyzed information of competition activity of national teams, taking part in the matches of world cup 2014 years on basket-ball. Information of 24 men's (240 athletes) and 16 (150 athletes) woman's basket-ball teams were in general complication analyzed. **Methods:** analysis of data of the special scientific-methodical literature, pedagogical supervision, analysis of competition activity, an analysis of data is the Internet, methods of mathematical statistics. **Results:** It is set that on the row of technique-tactical actions (assists, steals of ball, rebounders in defense, turnovers, block-shots) men's and woman's national teams did not have reliable differences statistically. The conducted analysis show that men's teams are in a match, do considerably less of throws from near and middle distance, however do much more throws amount of long distant at more high percent of their realization. **Conclusions:** in the actions of men's teams, a greater accent is traced on the attack of basket from long distances. Men's of all playing positions, have more high percent of realization of near throws in a match. Reliable distinctions on implementation of assists, steals, block-shots, between men's and woman's commands did not exposed.

Keywords: competition activity, technique-tactical actions, different playing positions, coefficient of efficiency, model characteristic.

Introduction. The competitive activity in basketball differs in the variety and variability of actions, the continuous manifestation of ingenuity, and the set of factors and joint actions more than ten players influence on sports result directly. It considerably complicates an estimation of the competitive activity of sportsmen, from the accuracy and objectivity of which the efficiency of the process of management of the competitive activity and all sports preparation depends directly [1; 2; 6; 9].

A wide range of options of a competitive fight, a need of interaction with partners in a team, a continuous correction of tactical plans and actions considerably complicate the process of estimation of game actions of basketball players. Besides, sportsmen should carry out a large number of technical-tactical actions, each of which in turn, being shown in a difficult ensemble of a competitive fight, can affect the course of a sports duel, to predetermine its result [1; 4].

One of the actual directions of the researches in basketball is the definition of key components of providing and realization of the competitive activity of players of high qualification, the identification from a numerous arsenal of the technical-tactical activity of the leading indicators and characteristics which first of all define a success of a game of sportsmen and a team [3; 5; 8; 7].

In our opinion, the researches directed on the identification of leading elements of the structure of the competitive activity of basketball players of high qualification taking into account gender features are rather interesting. The detection of features of the competitive activity of men's and women's teams will allow reflecting the priority directions of the realization and the main accent in actions of sportsmen in a match. The comparison of the level of the realization of separate game actions and indicators by men's and women's teams, the establishment of distinctions by the efficiency and the specifics of the performance of technical-tactical actions between basketball players of different game role and another is represented also interesting.

Communication of the research with scientific programs, plans, subjects.

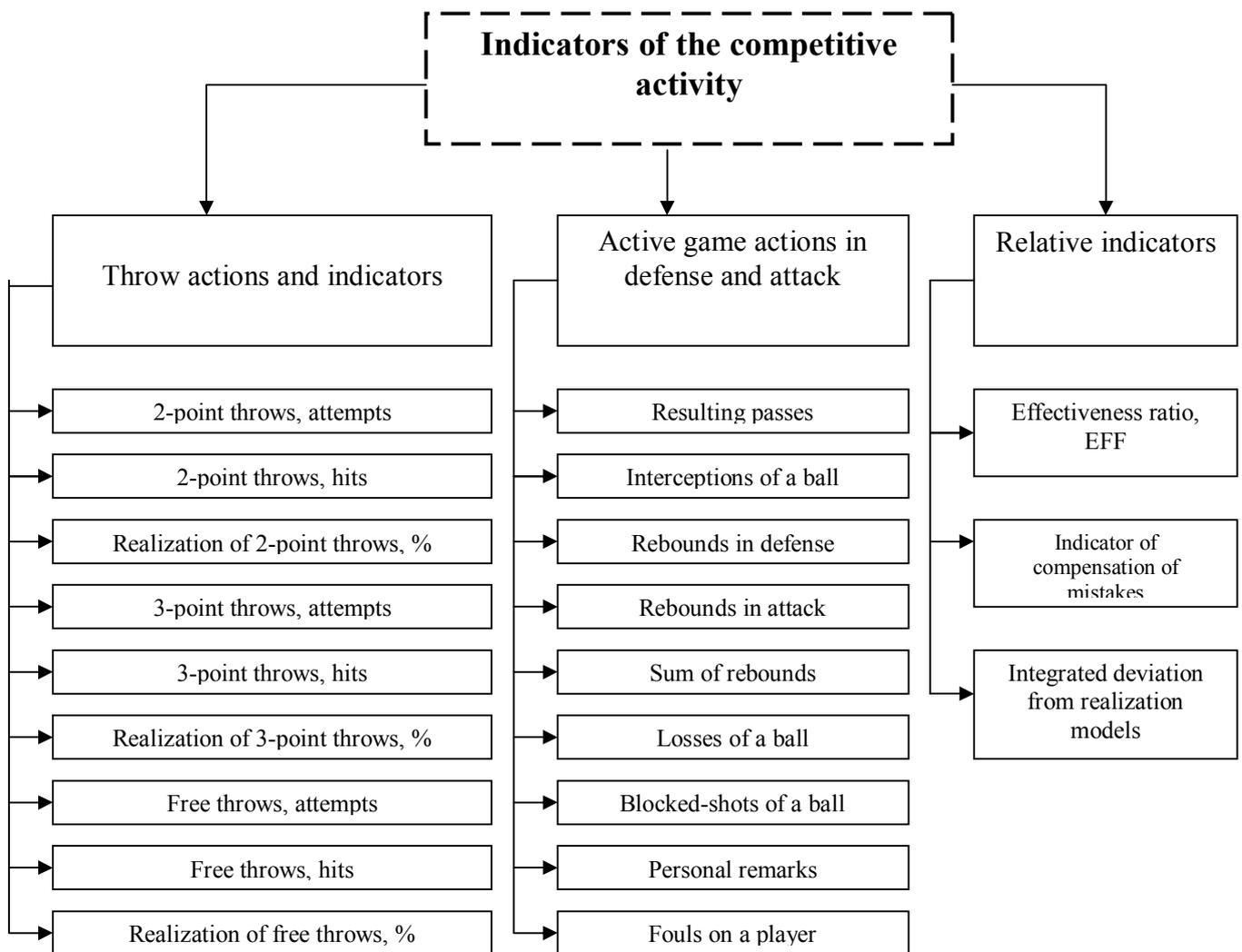
The work is performed within a research subject 2.3.1. «The argumentation of a modern system of selection and orientation of sportsmen in different types of sport» according to the Consolidating plan of RW in the sphere of physical culture and sport for 2011-2015.

The objective of the research: to reveal peculiar features of the competitive activity and to define differences in the realization of technical-tactical actions by high-class basketball players taking into account gender features.

Material and methods of the research: analysis of data of special scientific and methodical literature, pedagogical supervision, analysis of the competitive activity, analysis of data of Internet, methods of mathematical statistics. In the researches data of technical-tactical actions of the basketball players were analyzed, participating in the World Championship of 2014. In total data of 24 male and 16 female teams were analyzed.

Results of the research and their discussion. The technical – tactical actions which are used by experts today most often at the estimation of efficiency of the competitive activity of basketball players were analyzed for the solution of objectives of the research. The list of the used technical-tactical actions, make a traditional basis of official protocols of the competitions held under the auspices of the international federation of basketball (FIBA).

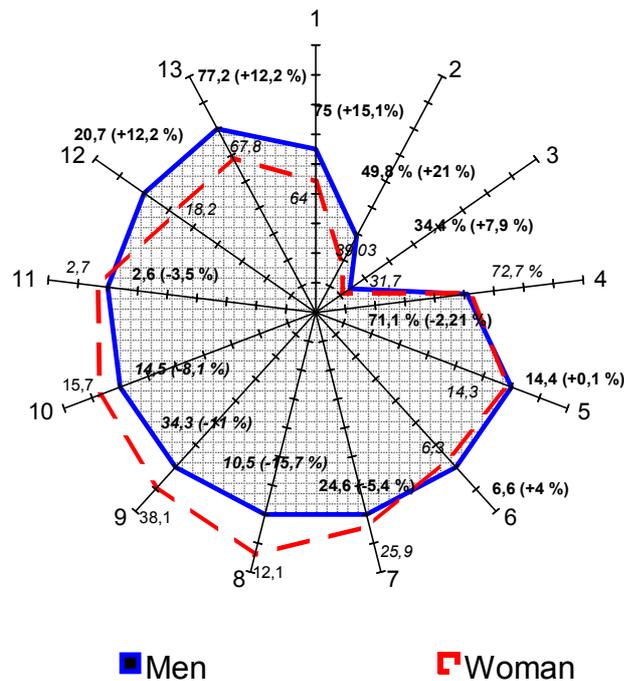
In total more than twenty game indicators and technical-tactical actions which can conditionally be divided into three main groups were used for the detection of specifics of the competitive activity of men's and women's teams: 1) throw indicators; 2) active game actions in defense and attack; 3) relative indicators and coefficients (pic. 1).



Pic. 1. The distribution of indicators of the competitive activity in basketball on groups taking into account the maintenance of an assessment

Data of the men's and women's national teams at the games of the World Championship of 2014 were used for carrying out the comparative analysis of the competitive activity. As a result of the conducted researches the model level of the realization of technical-tactical actions was established both for men's, and for women's basketball national teams. Model sizes were defined on the basis of the analysis of these all teams participating in a tournament (for men – 24 teams, 240 sportsmen for women – 16 teams, 150 sportswomen).

It is possible to see the results of these researches in pic.2, in which distinctions of women's and men's basketball teams are graphically presented by the efficiency of the realization of technical-tactical actions on the World Championship. The results of the men's national teams are given in the picture together with brackets in which the percentage difference with similar indicators of the women's teams is specified.



Pic. 2. The comparative efficiency of the realization of technical-tactical actions of men's and women's national teams in the World Championship in basketball of 2014

1 – gathered points in a match; 2 – realization of 2-point throws; 3 – realization of 3-point throws; 4 – realization of free throws; 5 – resulting passes of a ball; 6 – interceptions of a ball; 7 – rebounds in defense; 8 – rebounds in attack; 9 – total amount of rebounds of a ball; 10 – losses of a ball; 11 – blocked shots of a ball; 12 – fouls (personal remarks); 13 – effectiveness ratio (EFF)

So, the men's teams had a higher level of the realization 2-point ($49,83 \pm 5,53$ against $39,03 \pm 6,48$) and 3-point throws ($34,5 \pm 4,69$ against $31,76 \pm 4,14$) in championship matches. Thus it should be noted that the women's basketball teams made much bigger number of attempts of 2-point throws ($61,16 \pm 4,69$ against $40,07 \pm 4,76$) in a match. The revealed distinctions have a statistically reliable character (tab. 1).

The men's teams, in turn, have the best indicators in the quantitative-qualitative relation on 3-point throws, i.e. do bigger quantity of throws in a match and have a higher percent of their realization authentically.

Analyzing features of the realization of throw indicators by men's and women's teams, it is possible to assume about the existence of the following tendency in general. Male teams do considerably smaller quantity of throws from a near and an average distance at higher percent of their realization in a match that as a result allows them to gather an approximately equal quantity of points with the women's teams at the expense of these throws. Thus the men's teams do much bigger quantity of distant (3-point) throws in a match at higher percent of their realization (tab. 1).

Table 1

The comparative analysis of the efficiency of the realization of technical-tactical actions by basketball players of high qualification of men's and women's teams in the World Championship of 2014

Technical-tactical actions	Men (n=240) S±SD	Women (n=150) S±SD	p<0,05
The gathered points	75,53±8,76	64,05±11,90	<0,05
2-point throws, hits	20,01±3,55	24,01±5,14	<0,05
2-point throws, attempts	40,07±4,76	61,16±4,69	<0,05
Realization of 2-point throws	49,83±5,53	39,03±6,48	<0,05
3-point throws, hits	7,54±1,34	5,11±1,14	<0,05
3-point throws, attempts	21,97±3,38	16,28±3,98	<0,05
Realization of 3-point throws	34,5±4,69	31,76±4,14	<0,05
Free throws, hits	12,9±2,91	10,93±2,91	<0,05
Free throws, attempts	18,04±3,54	15,06±3,58	<0,05
Realization of free throws	71,16±4,76	72,74±6,64	–
Resulting passes	14,41±2,60	14,13±3,81	–
Interceptions of a ball	6,64±1,80	6,38±1,88	–
Rebounds of a ball in defense	24,65±3,36	25,99±5,17	–
Rebounds of a ball in attack	10,53±2,34	12,19±3,78	<0,05
Total amount of rebounds of a ball	34,40±5,56	38,19±7,79	<0,05
Losses of a ball	14,54±2,29	15,74±2,59	–
Blocked-shots of a ball	2,67±1,60	2,77±1,20	–
Personal remarks (fouls)	20,78±1,91	18,20±2,59	<0,05
Effectiveness ratio (EFF)	77,26±16,74	67,82±29,39	<0,05

The priority in attack of a basket of the rival from a distant distance is traced in actions of the male teams. If to correlate these distinctions, than two attacks by a 2-point throw at the male teams are the share of one attack by a 3-point throw, and one attack from a distant distance are four attacks from an average and near distance at women, i.e. it is twice more. Also the men's teams carry out bigger quantity of free throws in a match. Obviously what exactly these features also define so essential difference in the number of points scored for a match. On average, the men's teams score 75,53±8,76 points during a match, and the women's – 64,05±11,90, p<0,05.

It is also possible to note that the women's teams don't concede the men's, moreover, on a number of technical-tactical actions have the reliable advantage over men (rebounds in attack and total of rebounds of a ball) on other game indicators which basketball players carry out in defense and attack.

It is possible that the attempt of a direct comparison of data made in the real research and definitions on this basis of the primary efficiency of the competitive activity of the men's and women's national teams isn't correct. As the level of the realization of technical-tactical actions in many respects depends on who resists to a team in a match.

Despite it, nevertheless it is possible to note that the revealed features allow seeing specifics of the competitive activity in man's and woman's basketball, to

consider these data when training sportsmen and further the estimation of efficiency of their competitive activity.

It is known that sportsmen carry out five main game functions on a platform in modern basketball: point guard, shooting guard, small forward, power forward and center. Each of game positions imposes specific requirements to the level of preparedness and sets certain game tasks for the sportsman. And this classification is accepted both in men's and in women's basketball by role. In the light of the real research the detection of distinctions between players of different role taking into account gender features was represented actual. The conducted researches showed that men and women have a similar tendency in the priority of the realization of technical – tactical actions in a match. The point guards and the shooting guards have the highest level of the realization of result passes and interceptions of a ball in a match, players of the line of an attack (the power forward and center) make bigger number of rebounds of a ball under boards and blocked-shots of a ball. It is possible to see the reliability of distinctions between players of different role on the realization of technical-tactical actions in tab. 2.

Analyzing the data presented in tab. 2, it is possible to note that only the point guards of men's teams had the reliable advantage over basketball players of the same role in the number of points scored in a match ($p < 0,05$), for other players similar distinctions aren't revealed. It is also possible to note that men practically of all game roles have a higher level of the realization of 2-point and 3-point throws in a match.

Conclusions:

1. The research of the competitive activity of high-class basketball players, the definition of key components of its providing and realization are an important problem of scientific researches in the theory and practice of basketball. The analysis of the structure of the competitive activity of high quality teams allows opening features of a behavior of a team and players in a match, to plan optimum ways of its correction and the further improvement.

2. The comparative analysis of the efficiency of the realization of technical-tactical actions by the men's and women's national teams in the World Championship of 2014 showed that men's teams place much bigger emphasis in a match on attack of a basket of the rival from a distant distance. At the same time men attack from near and average distances almost twice less, than women, but thus they have a higher percent of the realization of these throws. Women's teams make bigger number of rebounds of a ball on average for a match both in defense, and in attack that is most likely caused by a large number of inexact throws and further fight for a ball jump offs.

3. The comparison of men and women taking into account the game specialization allowed revealing the existence of a single trend for them in the priority of the realization of technical-tactical actions. Men of all roles have a higher percent of the realization of 2-point and 3-point throws in a match. In turn, the basketball players acting in the defense line have an authentically higher level of rebounds of a ball in a match.

Table 2

The comparative analysis of the efficiency of the realization of technical-tactical actions by basketball players of high qualification of men's and women's teams in the World Championship of 2014 taking into account a game role

Technical-tactical actions	Point guards		p<0,05	Shooting guards		p<0,05	Small forwards		p<0,05
	Men (n=50) S±SD	Women (n=30) S±SD		Men (n=50) S±SD	Women (n=30) S±SD		Men (n=50) S±SD	Women (n=30) S±SD	
The gathered points	13,53±5,47	10,80±4,14	<0,05	14,6±5,15	13,8±4,71	–	14,02±4,27	13,3±4,85	–
2-point throws, hits	2,99±1,61	2,79±1,56	–	2,98±1,52	3,46±2,34	–	3,42±1,58	3,11±2,0	–
2-point throws, attempts	6,65±2,66	6,90±3,15	–	6,26±2,77	8,12±3,75	<0,05	6,98±2,80	7,62±3,49	–
Realization of 2-point throws	44,4±16,0	40,4±14,22	–	48,0±15,7	39,90±15,0	<0,05	48,7±13,3	38,8±15,50	<0,05
3-point throws, hits	2,0±1,2	1,28±0,83	<0,05	2,27±1,40	1,51±1,05	<0,05	1,99±1,19	1,88±1,38	–
3-point throws, attempts	5,8±2,5	4,35±2,08	<0,05	6,42±2,74	4,16±2,48	<0,05	5,25±2,38	5,53±2,65	–
Realization of 3-point throws	32,8±14,3	28,4±12,8	–	35,2±15,4	39,2±17,3	–	37,5±15,1	31,7±16,3	–
Free throws, hits	2,43±1,7	2,21±1,33	–	2,1±1,5	2,26±1,33	–	3,36±1,6	2,13±1,54	–
Free throws, attempts	3,1±1,9	2,88±1,86	–	2,92±1,94	2,86±1,52	–	3,12±1,96	3,15±2,14	–
Realization of free throws	74,8±18,6	79,3±18,5	–	71,8±26,6	80,7±19,8	–	73,9±22,5	69,20±21,2	–
Resulting passes	5,1±2,1	4,86±2,26	–	3,0±1,75	3,37±1,91	–	2,98±2,31	2,35±1,30	–
Interceptions of a ball	1,56±1,2	1,64±1,02	–	1,28±0,75	1,35±0,87	–	1,47±1,04	1,25±1,01	–
Rebounds of a ball in defense	2,8±1,16	3,39±1,43	<0,05	3,05±1,40	3,58±1,97	–	4,19±1,65	3,88±1,59	–
Rebounds of a ball in attack	0,8±0,7	1,05±0,71	–	0,95±0,90	1,09±0,84	–	1,66±1,40	1,53±1,09	–
Total amount of rebounds of a ball	3,6±1,4	4,45±1,73	<0,05	3,98±1,68	4,67±2,44	–	5,78±2,50	5,40±2,07	–
Losses of a ball	3,0±1,3	3,46±1,20	–	2,90±1,90	2,65±1,22	–	2,39±1,34	2,85±1,15	–
Blocked-shots of a ball	0,12±0,11	0,14±0,26	–	0,18±0,13	0,38±0,47	<0,05	0,32±0,46	0,46±0,42	–
Personal remarks (fouls)	4,1±1,6	3,36±1,41	<0,05	3,8±1,55	2,9±1,30	<0,05	4,4±1,76	3,70±1,45	–
Effectiveness ratio (EFF)	6,7±4,3	5,66±3,0	–	6,04±3,55	6,96±4,19	–	6,99±4,21	6,01±3,98	–

Technical-tactical actions	Power forwards		p<0,05	Center		p<0,05
	Men (n=50) S±SD	Women (n=30) S±SD		Men (n=40) S±SD	Women (n=30) S±SD	
The gathered points	14,80±5,46	12,99±5,31	–	16,8±6,24	14,1±5,01	–
2-point throws, hits	4,28±2,63	4,59±2,17	–	6,18±2,63	5,45±2,47	–
2-point throws, attempts	8,68±4,73	11,1±3,68	<0,05	11,62±4,13	11,44±3,58	–
Realization of 2-point throws	49,27±15,13	40,5±15,30	<0,05	53,64±13,4	45,76±13,57	<0,05
3-point throws, hits	1,44±1,09	1,22±1,06	–	0,73±0,91	0,97±0,86	–
3-point throws, attempts	4,5±2,7	3,95±3,79	–	2,20±2,10	3,34±1,95	–
Realization of 3-point throws	31,14±12,9	29,38±15,87	–	32,38±17,3	22,63±20,12	–
Free throws, hits	2,85±1,96	2,46±1,41	–	3,55±2,05	2,86±1,41	–
Free throws, attempts	12,43±8,4	3,61±1,75	–	5,58±2,49	4,24±1,65	<0,05
Realization of free throws	69,5±19,9	66,48±21,99	–	65,79±18,0	66,26±19,4	–
Resulting passes	1,82±1,37	1,79±1,0	–	1,77±1,47	1,77±1,24	–
Interceptions of a ball	1,03±0,85	1,27±0,95	–	0,98±0,77	1,0±0,55	–
Rebounds of a ball in defense	5,5±2,53	5,77±1,92	–	6,60±2,53	6,70±2,78	–
Rebounds of a ball in attack	2,48±1,68	3,44±1,81	<0,05	3,48±1,95	3,06±1,46	–
Total amount of rebounds of a ball	7,99±3,04	9,26±2,93	–	10,0±3,74	9,77±3,10	–
Losses of a ball	2,45±1,32	2,66±1,55	–	3,01±1,36	2,75±1,17	–
Blocked-shots of a ball	0,61±0,72	1,0±1,08	–	1,43±1,23	1,06±1,02	–
Personal remarks (fouls)	4,66±1,59	3,99±1,58	–	4,80±2,20	4,10±1,34	–
Effectiveness ratio (EFF)	7,38±4,71	7,65±5,08	–	9,62±5,86	9,48±5,88	–

Prospects of further researches are connected with the analysis of dynamics of changes in the realization of technical-tactical actions by sportsmen during the World championships in basketball.

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