

Analysis of gaming actions of the central blocking in competitive activity of women's volleyball amateur teams

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Purpose: determine the quantitative indicators of the game actions of the central blocking amateur teams in competitions under the aegis Volleyball Federation of Kharkiv region.

Material & Methods: an analysis of statistical data obtained as a result of pedagogical observations of the execution of blocks in 36 games (116 games) by 10 players of this role was carried out. The following methods were used: analysis of scientific methodological literature; pedagogical observation, methods of mathematical statistics.

Results: quantitative indicators of gaming actions of players related to the execution of blocks, in particular, the distribution of loading of game zones by attacks, the distribution of the number of blocks of different species by zones, the distribution of the number of fines of their attackers are determined. The evaluation of the effectiveness of the actions of the players during blocking in various defense zones was carried out.

Conclusions: the results can be used to solve the problem of increasing the effectiveness of the game of central blocking volleyball teams in the process of training and competition.

Keywords: block, defense, zone, distribution, indicator, performance, volleyball.

Introduction

With the introduction of changes in the rules for conducting competitions in volleyball by the International Federation (FIVB) in 1992. Specialization of players has increased. If before volleyball players were mostly universal, recently thanks to innovations, a bright trend in the development of modern volleyball is the division of team players into binders, central blocking, diagonal, wing-spiker and libero [2; 3; 7].

As for the central blocking (attackers of the first tempo), then from the name of the line you can already draw a conclusion about his main tasks on the court during the game. First of all, it must reliably block the opponent's attack, while always being in the center of the grid. If the attack is the first tempo, then at the time of the transfer of the linking player, he is already in the jump. At the same time, the connecting player quickly gives the transfer central exactly to the hand, which causes a very fast attack, and the opponent can be ready to put the block or build a defense properly. These players do not participate in the reception, in the defense on the back line they play usually only in one placement after their own submission. And only in this location both central blockers are on the site at the same time [5; 6].

With the advent of the players in the teams of libero, the game functions of the central blockers were somewhat limited, which, in particular, allowed to reduce their game load due to the frequent replacement of libero on the team's back line of defense. This allowed coaches to pay more attention to the performance of their direct functions in the training process.

In modern volleyball, when analyzing the results of the game players' actions, the latest computer technologies. Computer data analysis of competitive activities make it possible to use

operational information to make appropriate adjustments to the process of preparing volleyball players, as well as organizing the game teams. Most national teams and leading volleyball clubs use different methods and computer programs to assess the effectiveness of competitive activities. The most widespread is the Italian computer program "Data Volley", which is widely used by volleyball clubs of the highest echelon in many countries of the world. In Ukraine, leading clubs also use this program to obtain relevant statistical reports of matches of the national championship. Perspective is the method based on the system of scoring characteristics of the elements of competitive activity on the scale of assessments, objectively determine the effectiveness of the appropriate technical technique [1; 3; 4]. In the framework of this technique, the recording of game actions is performed using code records during the pedagogical observations of the matches. The results of the corresponding statistical data are analyzed using mathematical statistics using computers. For the purpose of monitoring and evaluating the results of the volleyball team's competitive activity, it is possible to determine the corresponding indicators of the effectiveness of the team's game actions in general and of each player individually.

Trainers and volleyball specialists are interested in obtaining as much information as possible about various aspects of performing game actions of players, which makes it possible to check the various options for the opponent's actions in game situations and the selection of appropriate technical and tactical options for the game. It should be noted that in the technical reports on the results of the matches, which are published in a special sports press, there is rather limited information about the performance by players of various game techniques. Trainers of amateur teams almost do not have access to computer programs that are designed to evaluate the results of their players' competitive activities, for the lack of

CRG and adequate funding.

Carrying out of the detailed analysis of quantitative parameters of performance of game actions of volleyball players Role of the central blocker determined the direction of this research.

Relationship of research with scientific programs, plans, themes. The direction of research corresponds to the subject of the Consolidated Plan of Research in the field of Physical Culture and Sports for 2014–2019. Ministry of Ukraine for Family, Youth and Sports 2.4.12 1n on "Optimization of training and competitive activities in sports games" (state registration number No. 0114U002659).

Purpose of the study: to determine the quantitative indicators of gaming actions of the central blocking amateur women's volleyball teams under the auspices of the FVKhR.

Material and Methods of the research

In the work the analysis of the statistical data received as a result of pedagogical observations of the execution of locks in 36 games (116 games) by 10 players of this line is made. The following methods were used: analysis of scientific methodological literature; pedagogical observation, methods of mathematical statistics.

Results of the research and their discussion

Blocking is one of the most important technical and tactical methods of the game, which is the main means of protecting the team in the process of solving gaming problems in countering the enemy's attacking actions. In modern volleyball, the successful use of the unit largely determines the effectiveness of the team's play [5; 6].

In the processing of data by the execution of locks, it was found that the blocking players in different parties are unevenly performing defensive actions. It was found that the quantitative indicators of the performance of technical and tactical actions on the block depend on the number of attacking actions of the opposing team. That is, in the event of a decrease in the reception efficiency of the feed, the number of attacking game actions was reduced, and as a result of the blocking.

Analysis of the relevant statistics showed that in the total amount of technical methods of the game that used the central blockers in games, the percentage values of the performance of the various elements in percent, which are shown in Figure 1.

As can be seen from Figure 1, these players took part in defensive actions, determined by the following ratios: block – 58% and defense – 5%. To the defensive actions, the attacker performs and the pace includes the insurance of his attacking teammate, who was blocked by a rival, a single block of his extreme first-line attackers and "self-insurance", that is, backing balls after "bounces" from his own unit.

The table shows the results of the calculations of the average quantitative indicators of the I pace attacker during one batch in the performance of the feed, in the attack, the defensive actions in the first and second lines of defense.

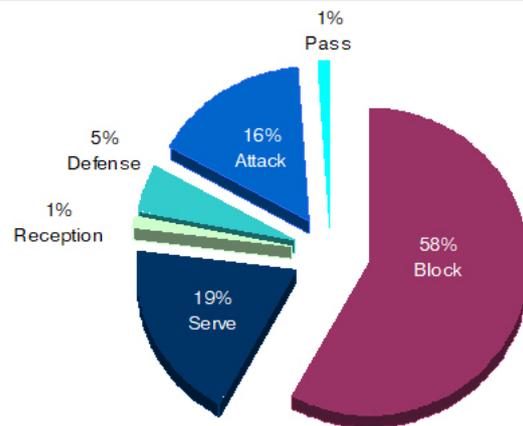


Figure 1. Distribution of the number of basic technical elements performed by the central blockers during the game, relative to their total volume

Table 1
Quantitative indicators of the performance of game actions by I pace attacker during a single game (n=10)

Statistical indicator	Actions in the attack		Actions in defense	
	Serve	Attacking strikes and transfers	Defense actions in the first line of defense	Defense actions in the second line of defense
$\bar{X} \pm \sigma$	7,84±0,52	7,46±0,64	23,93±2,07	2,02±1,38

The I pace attacker performs basically defensive actions in the first line of defense, that is, blocks enemy attacks from the central zone near the grid. In the second line of defense, he serves as a defender, insuring his attackers, whose strokes have blocked the opponent. This occurs when you organize your attack "from scratch" or "upgrade", the corresponding share of the total amount of defensive actions is 89%, or when the attacker and the pace does not succeed in organizing the group block of his team position of its location – 11%. In this case, he is compelled to insure the unit unit of the extreme attacking teammate.

As a result of the research, it was found out that in modern volleyball, a characteristic feature of the team's defense is the presence of a single block, as well as a group one, in which two or three players (double or triple block) take part as the first echelon of defense. In the group block, the main blocking player is always selected, whose task is to neutralize the "dangerous" point for the opponent's attack.

As the main blocking player may be:

- central blocking (when an opponent rushes from zone 3), which can move from the center to the edge of the grid (in accordance with zones 2 and 4) in case of an attack from these zones;
- one of the wingers who take part in the organization of the defensive actions of the team (zones 2 or 4), that is, they are responsible for neutralizing the attack of the attacking opponent according to the zones 4 and 2 of his site.

Blocking of the opponent's strikes, performed at different heights and different distances from the grid, have certain features. So, with a skilful attack from distant grids, block-

ing retaliatory strikes is somewhat more difficult. In this case, there are increased requirements to the ability of blocking players to provide for the direction of the flight of the ball after the strike as soon as possible (on the impact of the attacker's arm, but not on her assassination attempt) and the ability to move hands appropriately to block the opponent's attacks.

According to the code records of the results of the pedagogical observations of games, the most "loaded" zones were identified, that is, the proportion of the number of attacks of an opponent from these zones relative to their total volume. Out of zone 4, 40% of attacks were performed; with 3 – 18% of attacks; from 2% to 28%; because of the three-meter line ("pipe") – 14%.

From a practical point of view, this information is important for team coaches, first, because it also indicates the loading of different zones by the block, since, as a rule, blocking players specialize in the execution of the unit in certain zones. It gives a real possibility to assume, even program the actual workload of each player on the block.

We have determined the relative shares of the number of locks by players of different roles of strikes made from different zones of the opponent's attack. Thus, the attacker of 1 tempo in zone 3 performs blocking more than his teammates, since he takes part in blocking in all three zones. His share in the block is significant and reaches up to 50%. As for zone 2, the corresponding share is 30–35%, since the number of rivals' attacks from zone 4 for various reasons significantly exceeded their number from other zones, the share corresponding to participation in the block of players of the 4 zones was 15%.

Players who perform blocking attacks in zone 4 have less load, because half of the rivals have attacks in situations where there is a connecting player in zone 2. Recently, the number of locks of these players has increased, since attacks from the back line of the playing field occur more often from the first zone.

In our opinion, the reason for such a "lag" players of zone 4 is, as a rule, a smaller number of attacks against them. While the central blockers in the third zone operate under more difficult conditions, they must control the attacks of the attacker of the 1st tempo, and depending on the actual situation, switch to participating in group blocking of the opponent's strikes from other zones. According to the conducted research, the 1 pace attacker playing in the 3 zone, performs the actions in the following ratio: in the group - 81% and single blocking – 19%.

The load in the game actions on the block requires from the attacker And the tempo is not any speed in the movements along the grid and, as a rule, a high level of speed endurance.

We also determined the distribution of the number of positive locks, directly accompanied by winning points by blocking players. Thus, in the total amount of such locks, 32% are accounted for the proportion corresponding to the actions of

the central blockers (zone 3), zone 2 players – 43%, and the zone 4 outside hitter – 25% (Figure 2). The resulted results can be considered some degree as the certain indicators of productivity of actions on the block.

Analysis of statistical data showed that in the struggle against the grid of attacking teams of the opponent and players who perform blocking of their strikes, the number of points that were obtained by the actions of attacking players is noticeably dominated by the corresponding results obtained by the blockers. One of the reasons for this advantage of the corresponding results (almost fourfold) is due, in our opinion, to the secondary nature of the block compared to the attack, since the attacking player himself chooses the method, direction, power of the strike, and the unit must act only in accordance with the initiative of the scorer. Of great interest is the definition of the role of other factors that can affect the difference in the lag of the above results.

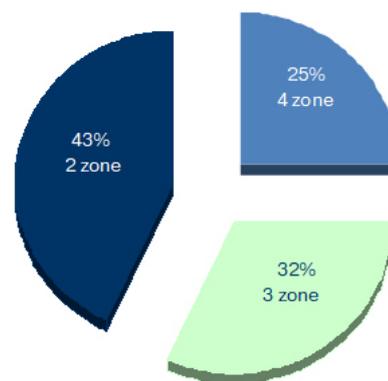


Figure 2. Effectiveness of actions when blocking attacks of attacking opponents by players located in different protection zones

Conclusions

The analysis showed that in the total volume of effective blockage of the opponent's blows, which were completed directly by winning the point, the share of the central blocking (zone 3) is 32%. Summarizing, it can be recognized that the use of the results of this study will help trainers in choosing objective values of quantitative indicators of gaming actions of blocking players in each zone. This will allow to optimize the training and training process for preparing attackers of the first tempo to participate in competitive activities.

Prospects for further research. From the practical point of view, the objective evaluation of quantitative indicators of the effectiveness of blocking by players of different roles is very important for team coaches. Such indicators determine the combined probability of winning a point after the corresponding game actions of the opposing team that occur on the court after the blocking of the attacking blows of its attackers. The methodology for determining the relevant indicators was developed by the authors [1; 4] and further work is needed to perform their calculations.

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