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**FEATURES OF EFFECTIVE GOAL SHOTS BY FOOTBALL PLAYERS IN
GAMES OF HIGH LEVEL TEAMS**

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Purpose: to establish the peculiarities of effective goal shots by highly qualified football players.

Material and Methods: registration of technical and tactical actions (TTA) was carried out using the games of the teams of 2019/2020 UEFA Champions League. In total, 108 games were analyzed. The following research methods were used in the article: analysis of scientific and methodological literature, registration of TTA, methods of mathematical statistics.

Results: the paper presents data that characterize the features of effective goal shots by football players in the games of high-level teams. In total, 344 shots were recorded and analyzed in 108 games of the teams of 2019/2020 UEFA Champions League. All effective goal shots were classified according to the time, place, situation, method and conditions of performing.

Conclusions: it was established that highly qualified football players were more likely to perform effective goal shots from 76 minute to 90 from the penalty area (except for goal area), after receiving the ball from a team partner, with the first touch, to kick the ball on the ground, to the lower part of a goal.

Keywords: shots, penalty area, goal area, goal frame, lead leg, set piece, goal area, playing position.

Introduction

Football is a type of sport in which the result is determined by the difference between scored and conceded goals. Therefore, situations that lead to scored and conceded goals have always been within the scope of national [4-6, 8] and foreign [11-15] theorists and practitioners.

Thus, in one study [5], we found that the teams participating in the 2014 World Cup in average scored 1.3 goals per game. The highest number of effective shots (25.2% of all goals) by football players in the games of this tournament was made from 76 to 90 minute of play. Analyzing the place of performance of effective shots in the 2014 FIFA World Cup games, it was determined that almost half of all goals (46.4%) were scored from the area between the goal area and the penalty mark. The results of the study indicate that players had to do 60.3% of all effective shots with the first touch, 23.8% after receiving and only 15.9% after dribbling the ball.

These data are partially confirmed by the results of another study [6], in which we analyzed the peculiarities of performing effective shots by football players of the teams of the first league of Ukraine.

According to the results of this study, the players of one team of the first league of Ukraine scored averaged 1.4 goals per game. More goals were scored from 16 to 30 minute (30.0% of all goals), less - from 1 to 15 and from 46 to 60 minute (10.0% of all goals). 34.5% of the goals were scored from the goal area by the players of this team. From the area between the goal area and the penalty mark 41.4% of the goals were scored. 6.9% of the goals were scored from the area between the penalty mark and the penalty area. From outside the penalty area, the players scored 17.2% of the goals. At the same time, 78.3% of all the goals of the team were scored by the players after passing the ball from a partner and 21.7% of the goals after bouncing the ball from the goalkeeper, defenders or goal frame. 56.5% of all effective shots were made

with the first touch, 34.8% of goals were performed after receiving the ball and 8.7% of goals – after dribbling the ball.

It should be noted that experts have recently been increasingly favoring the exploration of those individual and team actions on which, in their view, the outcome of a particular game depends. It is that technical and tactical actions are considered by many authors as shots on goal [7, 9, 10].

The analysis of some studies [2, 7, 9, 10] allows to think that high-level teams perform between 2 and 23 shots on the goal. At the same time, according to the observations of 12 UEFA Champions League games [7], it was found that 14.5% of all shots successfully ended with scoring on goal.

Thus, summarizing the data obtained in previous studies, we can conclude that high-class players under the competitive conditions are more likely to perform shots on goal:

- stationary or moving ball,
- after passing the ball from a partner,
- one touch,
- low shot,
- from the penalty area.

However, despite the great importance of set pieces for modern football [1, 3], football players are increasingly less likely to perform free and penalty kicks.

Connection of the study with scientific programs, plans, topics. This study was performed in accordance with the research theme of the Departments of Football and Hockey, Sports Games and Martial Arts of the Kharkiv State Academy of Physical Culture for 2016-2020 on the topic "Psycho-sensory regulation of athletes' motor activity in situational sports".

Purpose of the study is to establish the features of effective goal shots by highly qualified football players.

Material and Methods of the research

The registration and analysis of the TTA took place in the UEFA Champions League group stage games in the 2019/2020 season in accordance with known

recommendations. In total, 108 games of the thirty-two UEFA Champions League teams in the 2019/2020 season were analyzed (96 group stage games and 12 play off round).

Results of the research

Table 1 shows the quantitative indicators of effective goal shots in different period of playing time by football players in the games of 2019/2020 UEFA Champions League.

Table 1

Number of scored goals in different period of playing time by football players in the games of 2019/2020 UEFA Champions League

Period of Time	Number	Percentage, %
1-15 minutes	41	11,9
16-30 minutes	43	12,5
31-45 minutes	59	17,2
46-60 minutes	55	16,0
61-75 minutes	57	16,6
76-90 minutes	85	24,7
91-105 minutes	2	0,6
106-120 minutes	2	0,6
Amount of scored goals	344	100,0

The results of the table show that the greatest number of goals of Champions League teams were scored from 76 to 90 minute of play (24.7% of all goals). The lowest number of effective shots (11.9%) is characteristic for the beginning of the match.

This seems rather logical. First, at the beginning of the match teams usually play cautiously, the players do not take any unnecessary risk, seek to perform all technical and tactical actions reliably. Secondly, team players are not tired during the first minutes of the match and, as a result, rarely make unforced errors. In turn, the players get tired by the end of the game, and defenders make mistakes more often. At the same time, changes in the teams composition more often affect the attacking players, that when entering the field take precedence over the tired opponents. It should also be noted that in most cases, in the last minutes the play becomes more open, teams tend to change the score in the match, and often take the risk.

It should be noted that we have registered 344 goals in 108 Champions League games. Of these, 9 goals were scored by the players at their own goal. Thus, in order to determine the peculiarities of performing the effective goal shots by highly qualified football players in the UEFA Champions League games of the 2019/2020 season, we analyzed only 335 goals.

Table 2

Number of scored goals from different areas of the football field by football players of teams 2019/2020 UEFA Champions League

Football field area	Number	Percentage, %
Goal area	74	22.1
Penalty area (except for the gate area)	222	66,3
From outside the penalty area	39	11.6
Amount of scored goals	335	100,0

Thus, as a result of the conducted research, it was found that the players of the teams participating in this tournament scored more often from the penalty area without taking into account the goal area (66.3% of all goals). At the same time, 22.1% of all goals were scored from the goal area, and only 11.6% of all goals were scored from outside the penalty area (Table 2).

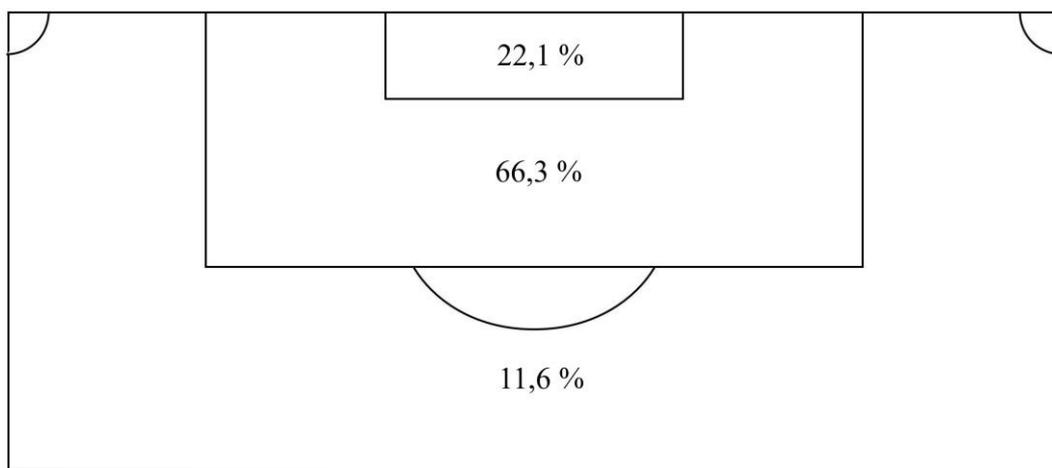


Fig.1. Percentage of goals scored from different areas of the football field by football players of teams 2019/2020 UEFA Champions League

Analyzing the goals scored during the game and from set piece by teams of Champions League season 2019/2020, it is clear that only 9.6% of all goals were scored by a direct kick from the set pieces (Table 3).

Table 3

Number of goals scored during the game and from set piece by football players of teams 2019/2020 UEFA Champions League

Goal Shots	Number	Percentage, %
During the game	303	90,4
From the set piece	32	9.6
Amount of scored goals	335	100,0

Moreover, out of the 32 goals scored from the set piece, only 1 was scored from a free kick and 31 from a penalty kick (Table 4). This can be explained, first, by the discipline of the players near their penalty area (football players violate the rules less in dangerous areas) and, secondly, by the organization of defensive actions of the team players, which defends when performing a free kick to the opponent (setting up a wall, positioning of goalkeeper and players who defense him and more).

Table 4

Number of goals scored during the game and from the set piece by football players of teams 2019/2020 UEFA Champions League

Set piece	Number	Percentage, %
Penalty kick	31	96.9
Free kick	1	3.1
Amount of scored goals	32	100,0

The analysis of the effective shots performed with the foot and the head of high-qualification football players shows (Table 5) that out of 335 goals of the Champions League teams, 191 goals (57.0%) were scored with the right foot, 102 goals (30.4%) with the left foot and 42 goals (12.5%) with the head.

Table 5

Number of scored goals with foot and head by football players of teams 2019/2020 UEFA Champions League

Goal shots	Number	Percentage, %
Right foot	191	57,0
Left foot	102	30.4
Head	42	12.5
Amount of scored goals	335	100,0

Interesting data we received in the analysis of the effective goal shots, which players performed with the lead and non-lead legs. Thus, out of the 293 goals that the players scored with legs, 231 goals were scored with the lead leg and 62 goals with the non-lead one (Table 6).

Table 6

Number of scored goals by the lead and non-lead legs by football players of teams 2019/2020 UEFA Champions League

Goal shots	Number	Percentage, %
Lead leg	231	78,8
Non-lead leg	62	21,2
Amount of scored goals	293	100,0

Moreover, if from the set piece (free kick or penalty kick), when the players had time and opportunity to think over their actions and perform a kick with a stronger leg, the players scored goals only with the lead leg. That is, in the play, when they had to act in conditions of shortage of time and space, football players performed 23.8% of effective shots with a non-lead leg (Table 7).

Table 7

Number of goals scored with the lead and non-lead legs in the open play by football players of teams 2019/2020 UEFA Champions League

Goal shots	Number	Percentage, %
Lead leg	199	76,2
Non-lead leg	62	23,8
Amount of scored goals	261	100,0

Table 8 presents the quantitative indicators of the effective goal shots that were performed by the players in different game situations.

Table 8

Situations in which effective goal shots (open play) were performed by football players of teams 2019/2020 UEFA Champions League

Goal shots	Number	Percentage, %
After passing the ball from a partner	249	82,2
After bouncing the ball from goalkeeper, defenders, goal frame	54	17,8
Amount of scored goals	303	100,0

The table shows that 82.2% of all goals were scored by football players after passing the ball from a partner and 17.6% after bouncing the ball from the goalkeeper, defenders or goal frame.

It has long been known, that every year during the play football players have to perform TTA more often under the conditions of high tension, on a limited field area, struggling with an opponent and at high speed. This is especially true of those TTA carried out by players within the penalty area.

The results of our studies partially confirm this tendency. Thus, Table 9 shows that 63.4% of all goals scored with one touch, 20.1% of goals after receiving the ball and only 16.5% of goals after dribbling the ball.

Table 9

Ways of performing effective goal shots (open play) by football players of teams 2019/2020 UEFA Champions League

Goal shots	Number	Percentage,%
First touch	192	63,4
After receiving the ball	61	20,1
After dribbling the ball	50	16.5
Amount of scored goals	303	100,0

Table 10 shows that 69.9% of the 335 total effective shots were made from the ground. Such goals included set piece shots (free or penalty kicks) or hitting the moving ball. In turn, 30.1% of all goals were scored by the players kicking the flying ball in this tournament. These goals included head and leg kicks, after passing the ball from a partner or bouncing it from the goalkeeper, defenders, goal frame, in one and two touches.

Table 10

Conditions under which effective goal shots were performed by football players of teams 2019/2020 UEFA Champions League

Goal shots	Number	Percentage,%
On the ground ball	234	69,9
Flying ball	101	30,1
Amount of scored goals	335	100,0

Analyzing the goal area, in which the players have often performed effective shots in the UEFA Champions League games, it is clear that 68.1% of all goals were

scored performing low-driven shot to the bottom part of the goal and 31.9% of all effective goals were scored to the upper part of the goal (Table 11).

Table 11

The goal area where the effective shots were performed by football players of teams 2019/2020 UEFA Champions League

Part of the goal	Number	Percentage, %
Upper part	107	31.9
Bottom part	228	68.1
Amount of scored goals	335	100,0

During the match, the players are assigned certain functional responsibilities. This is due to the main purpose of the game - to score more goals at the opponent's goal than to miss into their own. Therefore, one group of players is mainly attacking, and the other one is defensive.

Table 12 presents the numbers of goals scored by football players of different playing position of teams 2019/2020 UEFA Champions League.

Table 12

Number of effective goal shots by players of different playing positions of teams 2019/2020 UEFA Champions League

Playing Position	Number	Percentage, %
Goalkeepers	0	0.0
Central backs	12	3.6
Wing backs	14	4.2
Central halfbacks	68	20.3
Wingers	21	6,3
Central forwards	144	43,0
Outside forwards	76	22.7
Amount of scored goals	335	100,0

The given table shows that 43.0% of all Champions League goals were scored by central forwards, 22.7% by outside forwards, 20.3% by central halfbacks, 6.3% by wingers, 4.2% - wing backs and 3.6% - central backs.

The results of our research are in many ways consistent with previous studies that indicate the impact of playing position of football players on the structure of competitive activity of individual players and the team as a whole.

Conclusions / Discussion

The results of the study indicate differences in the quantitative indicators of effective goal shots of the teams participating in the 2019/2020 UEFA Champions League. High-skill football players were found to score more often from 76 to 90 minute of play, from the penalty area (except for the goal area), after passing the ball from a teammate, with the first touch, the ball from the ground, into the bottom part of the gate.

The results of the study confirmed the information [4-6, 8] regarding the time, place, methods and conditions of performing the effective goal shots by high-skilled football players.

The data [5, 6] concerning the number of scored goals by football players of high-level teams with the right and left foot, when there is an open play or a set piece, into the upper or bottom part of the goal, has been supplemented and expanded.

For the first time, the number of goals scored by football players in UEFA Champions League games with the lead and non-lead legs and by players having different playing position was obtained.

The main ideas and conclusions of this study should be taken into account while creating the individual or team exercises aimed at improving the technique and tactics of shots.

Prospects for further research in this area. Further studies will be devoted to the research of peculiarities of effective goal headshots by high-qualified football players under the competitive conditions.

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