Original Article

Selected indicators of an individual game performance of a goalkeeper at the European Championship among the 17-year-old elite soccer players

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Abstract:

The authors in this contribution deal with selected indicators of individual goalkeepers' game activities at the European Championship in 17 years old elite soccer players. Our hypothesis was based on previous research works in the senior and junior goalkeepers' categories. We have found out that at present there has been a change in the ratio between defensive and offensive game activities in favour of offensive once which could result in the change of the content of the training process and in greater number of offensive game activities. Demands on the goalkeeper's game performance are high. It turns out that at the end of the matches the goalkeepers have to deal with a greater number of game situations than in previous time periods. According to number of game activities and effectivity of individual game performances the demands on the goalkeeper at the European Championship are the same both in basic round and elite round.

Key words: soccer, European Championship, elite juniors, game performance, game activities, goalkeeper

Introduction

Some authors characterize the structure of game performance in sports games as a unity of execution and result of certain activity or as a particular complex sequence of activities, that are measured or evaluated on the basis of certain socially determined norms or as an internal structure of factors (elements, components) which mutually influence each other and optimally manifest themselves and they are necessary to achieve specific game performance. Game performance is realised in specific movement activities, where the content involves solution of the tasks, which are defined by the rules of given sport where the athlete tries to reach maximum to apply predispositions to achieve his performance. (Slovík, 1989; Morton, Williams et al. 1994; Dovalil et al., 2002; Court, 2002; Mohr, Krstrup, Bangsbo, 2003; Peráček, Hrnčiarik. 2010).

Evaluation of game performance is used to assess the effectiveness of strategies and tactics of the game of your own team and your opponent's team, to find out the development tendencies of the game etc. It is a valuable source of information to evaluate the effectiveness of the training process and further corrections. Evaluation of the game performance belongs to basic questions of theoretical and practical character. (Ejem, 1970; Hohmann and Brack, 1983; Dobrý and Semiginovsky, 1988; Reilly, 1994). Diagnostic activity is aimed at evaluation of the player during the match and in the training process. It leads to getting better knowledge of the current form of the player and possibility to compare information which was already gained. According to this knowledge the players are ranked in particular group, category (Lames, 1994; 1996.). To understand the game performance of the most successful teams means to understand the game performance of an individual player in his particular player's functions. Modern way of managing the preparation is not possible without applying continuous amount of different information. This applies to any function of the player in a team, including goalkeeper. (Brueggemann, 2008).

Material & methods

The aim of this research was to analyse selected indicators of an individual game performance of the goalkeepers at the European Championship 17 year old elite soccer players. (spread the knowledge on selected characteristics of an individual game performance of the goalkeeper in elite soccer).

Research hypothesis

H1: We presuppose that the frequency of offensive game activities in monitored goalkeepers will be statistically significant higher than defensive game activities in all matches.

H2: We presuppose that the most of the goalkeeper's game activities are executed at the end of the first and second half of a match.

H3: We presuppose that in elimination round of the tournament the frequency of offensive and defensive game activities of a goalkeeper will be statistically significant higher than in basic round of a tournament.

H4: We presuppose that in elimination round of the tournament the overall successfulness of the goalkeepers will be higher than in basic round.

Research design

The object of the research was monitoring the goalkeepers, members of the national teams, taking part in the European Championship 2013 to 17 years, in Slovakia. In the final matches which we had selected we monitored and recorded some single offensive and defensive game activities.

To evaluate different game activities during the match according to successfulness and unsuccessfulness of the goalkeeper, KOSTOLANSKY's (2006) scale of rating was used. It has an optimal number of levels (5) plus verbal description, expressing the different levels of certain specific game activities of the goalkeeper.

Table 1 Example of evaluation of the offensive game activity (skill) - distribution by kicking

Level(grade)	Verbal description
5(+)	- pass is executed fast and coordinated - pass is executed with accuracy, forward to his teammate or to the teammate in action
4 (+)	- pass is heading towards the opposite side where the goalkeeper received the ball - pass is executed fast and coordinated - pass is executed less accurate or is headed to slight countermove of the teammate
3 (+)	- pass is executed to the opposite side where the goalkeeper received the ball - pass is executed slower - pass is executed to an inappropriate player's position
2 (+)	- pass is executed to the centre of the field or to the same side - pass is executed slowly - pass is executed to the occupied player who has to solve the situation 1: 1(encounter)
1 (+)	- pass is executed to the same side where the goalkeeper received the ball - pass is executed uncoordinated - pass is executed inaccurate (out of pitch, towards the opponent)

Table 2 Example of evaluation of the defensive game activity (DGA) – catching the shot heading towards the goalkeeper.

Level(grade)	Verbal description
5 (+)	- catching the shots is executed safely, coordinated, at first attempt - catching the shots is executed in unclear situation - catching the extremely hard shots
4 (+)	- catching the shots is executed safely, coordinated, at first attempt - catching the shots executed in clear situation - catching the hard and slightly hard shots
3 (+)	- catching the shots is executed – second attempt (kick the ball) - catching the shots is executed in clear situation - catching the hard and slightly hard shots
2 (+)	- catching the shots is executed with significant problems, multiply times - catching the shots executed in clear situation - catching the hard and soft shots
1 (+)	- catching the shots is executed insufficiently (ball gets out of or slips out of hand which results in scoring or scoring opportunity of an opponent) - catching the shots was not executed

We have evaluated 10 game situations of the goalkeepers at the European Championship 17 year old soccer players. Out of the total, three of them were offensive game activities (OGA) and seven, defensive game activities (DGA).

Protocolling obtained data

Selected OGA and DGA were given an extra attention and records on an individual GA of the goalkeepers were recorded in the sheets prepared in advance in Microsoft Excel 2007 program with the help of created symbols and signs. Special goalkeeper's game activity was recorded in the data collection sheets (Table 3, 4), successful (+) or unsuccessful (-) handling the game activity with point score in different time periods with the help of the scale of assessment, number of successful and unsuccessful specific game situations of the goalkeeper, total number, percentage of successfulness in given GA and average grade in certain GA.

Table 3 Defensive game activities of the goalkeeper

Game activity	Monitoring										d	Σ GA	% Success
	V	1 st half				2 nd half				Match			
		10'	20'	30'	40'	50'	60'	70'	80'	Σ +/-			
Catching the shots at the goalkeeper	+												
	-												
Catching the shots heading beside the goalkeeper	+												
	-												
Clearing the shots at the goalkeeper	+												
	-												

Clearing the shots heading beside the goalkeeper	+												
	-												
Catching the final passes	+												
	-												
Clearing the final passes	+												
	-												
Advancing	+												
	-												

Table 4 Offensive game activities of the goalkeeper

Offensive game activities of the goalkeeper

Game activity	V	Monitoring								Match $\sum$ +/-	d	$\sum$ GA	% Success
		1st half				2nd half							
		10'	20'	30'	40'	50'	60'	70'	80'				
Distribution of an attack with hand	+												
	-												
Distribution of an attack with leg	+												
	-												
” Solution of the situation “back passes to the goalkeeper”	+												
	-												

To evaluate gained results we have used nonparametric Mann-Whitney U test (test of two relative values).

Results

Total number of all offensive goalkeepers' game activities was 425, out of these activities 354 were successful and 71 unsuccessful (83% successfulness). On average the goalkeepers performed 30 OGA. An average evaluation mark in 11 matches during offensive game activities achieved value of 3.7

The lowest percentage of successfulness in all goalkeepers was recorded in DGA, catching the shots heading beside the goalkeeper (33%) and the highest percentage of successfulness was recorded in four game activities. Catching the shots at the goalkeeper, clearing the shots at the goalkeeper, clearing the shots heading beside the goalkeeper and catching the final passes - in all game activities, the goalkeepers achieved 100% of successfulness. Overall percentage successfulness in 11 matches in all game activities was 85%. The goalkeepers achieved together 536 game activities, out of these activities 473 were successful and 83 unsuccessful.

According to previous researches and analysis of the matches we came to conclusion that applying one of the current development trends concerning this age category, will result in the change of offensive and defensive game activities in an individual game performance of the goalkeepers.

Table 5. Defensive game activities of the goalkeeper in monitored matches

Defensive game activity	+	-	$\sum$ +/-	d	% success
Catching the shots at the goalkeeper	13	-	13	4,1	100%
Catching the shots heading beside the goalkeeper	3	6	9	2	33%
Clearing the shots at the goalkeeper	10	-	10	4,5	100%
Clearing the shots heading beside the goalkeeper	16	-	16	4,4	100%
Catching the final passes	38	-	38	4,1	100%
Clearing the final passes	11	3	14	2,9	79%
Advancing	28	3	31	4,1	90%
$\sum$ DGA	119	12	131	3,9	91%

Table 6. Offensive game activities in monitored matches

Offensive game activities of the goalkeeper	+	-	$\sum$ +/-	d	% success
Distribution of an attack with hand	54	2	56	4,8	96%
Distribution of an attack with leg	153	29	182	3,6	84%
Solution of the situation "back passes to the goalkeeper"	147	40	187	3,4	79%
$\sum$ OGA	354	71	425	3,7	83%

Hypothesis 1: We have assumed that the frequency of offensive game activities in monitored goalkeepers will be statistically significant higher than in defensive game activities in all matches.

Figure 1 Comparison of defensive and offensive game activities of the goalkeeper in frequency at the European Championship 17, 2013

The matches we have monitored the goalkeepers made together 131 defensive game activities and 425 offensive game activities. On the basis of MANN-Whitney test - two relative values -we have found out statistically significant difference between the frequency of offensive game activities and defensive game activities of the goalkeeper at the European Championship 17 year old players (picture 1).

Hypothesis 1 was confirmed.

Hypothesis 2

Figure 2 The frequency of game activities of the goalkeepers in percentage, in different time periods in matches at the European Championship 17, 2013

The most of game activities executed by goalkeepers were in time periods of 31-40' and 71 – 80', it means at the end of the first and the second half. The hypothesis was confirmed.

Hypothesis 3: We have assumed that in elite round of the tournament the frequency of defensive and offensive game activities will be statistically significant higher than in basic round of the tournament.

Picture 3 Game activity on average to a match

This picture shows the frequency of game activities in basic round of the tournament where the goalkeepers made on average to a match 39 game activities and in elite round more on average to a match 46 game activities. We have found out that the goalkeepers in elite round made more game activities than in basic round but on the basis of the MANN-Whitney U test, we have not found out statistically significant difference in execution of game activities in different phases of the tournament. Hypothesis 3 was not confirmed.

Hypothesis 4

Figure 4 Percentage utilization of selected game activities in basic and elite round of tournament at the European Championship 17, 2013

On the basis of the Mann-Whitney test U we have found out that the difference between utilization of game activities in basic and elite round at the European Championship 17 years old players is not statistically significant difference and the frequency of different game activities in an individual game performance of the goalies in basic and in elite round at the European Championship did not show any statistical difference (hypothesis4).

Discussion

At present soccer is influenced by several trends of development; one of them is intensification of the game. It is not only the external load of the players from the bioenergetic point of view but it takes into account external load of the players according to game activity. If the goalkeepers want to speed up the game, it puts enormous demands on them. If the goalkeeper is less experienced, he is less successful in offensive game activities. The problem of anticipation and time aspect was dealt with by Williams (1973), Toering et.al. (2009), Weineck (1997) and Costa et al. (2010). The empirical evidence for the existence of anticipation is considered successfulness in game activities where the ball is advanced very quickly. It is possible to find out lack of anticipation in less experienced goalkeepers by monitoring and applying more demanding technologies. According to the difference in less or more experienced goalkeepers we can conclude that the subject is in the process of anticipation. A successful training drill (training) requires an excellent handling the physical phase of game activities, which require the player and mainly goalkeeper to be able to predict his own time movement and start activity in appropriate moment. Concentration on organization of the body movement can result in faster reaction than concentration on the ball. This stimulus is permanent. In praxes it is expressed by sentence: "before catching the ball you should know what to do with it". Involvement of the goalkeeper in offensive phase of the game is beginning to be more clear which is confirmed by numerous analysis by individual game performance in different matches of top events (Honz, 1997; Verheijen, 1998; Tarkovič, 2000; Kostolanský, 2006; Hrnčiarik, 2009; Peráček and Hrnčiarik, 2010; Peráček and Hrnčiarik, 2012). An attempt to control the game is easier realised if the goalkeeper is sufficiently well prepared to make short and long passes with the leg. This finding confirms the tendency of high participation of the goalkeepers in complex game performance of the team. Based on Peráček's findings (1992), we believe that successful involvement of the goalkeeper in junior category in a match involves different decisive parameters of offensive game activities which constitute basic cooperation between the players in the field in complicated game situations. Our consideration is in full compliance with Smith (2005), who claims that the player should be trained during the training process to meet the coach requirements on the game.

Conclusions

Our research has shown decreasing frequency of defensive game activities in favour of offensive game activities, results in change of soccer rules in this field. Goalkeeper is not just a function or duty in which dominates catching or clearing the shots of the ball. Goalkeeper possesses the role which has to handle beside his own game situations also the game situations of the player in the field.

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