



ASSESSMENT OF COMPETITIVE ACTIVITY AMONG GOALKEEPERS AT WOMEN'S HANDBALL EURO-2020

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A – study concept and design; B – data collection; C – data analysis and interpretation; D – paper writing; E – paper editing; F – paper final adoption

Abstract

Relevance. At the current stage of women's handball development, the rating of the prominent national teams is the main component on the international arena. Despite this the levels of training goalkeepers and the results of their competitive activity does not always comply with the rating of national teams. All this indicates the need of analyzing and substantiating their competitive activity results at the European forum.

The *aim of the research* is to analyze the play of the goalkeepers of women's national handball teams at the group stage of the European Championship 2020 and define the tendencies of the play's development.

Material and methods: theoretical analysis and generalization of research and methodological literature and technical protocols on the Internet; method of system analysis; chronological method; methods of mathematical statistics.

Results. The progress in the teams' play is determined based on objective results of competitive activity by both the players' actions and the goalkeepers' ones. At the previous group stage of the European Championship 2020 in handball the following was determined in the goalkeepers' competitive activity: the number of saves from 6-meter line (48 saves out of 242 shots on average at the group stage, 19.8% efficiency, the best personal – 1 shot 1 save, 100%), winger positions (485, 147, 30.3% and 8, 5, 62.5%, respectively) and the second offensive line (out of 9-meter line) while scripted offenses (463, 188, 40.6% and 7, 5, 71.4%, respectively); the number of saves after a kind of fast attack as fast break (166, 44, 26.5% and 1, 1, 100%) and breakaway (164, 35, 21.3% and 1, 1, 100%, respectively); the number of saves after 7-meter penalty shots (175, 37, 21.1% and 1, 1, 100%, respectively). The efficiency of using technical and tactical actions by the goalkeepers in the matches with their opponents promotes improvement of both competitive activity and the national team's success.

Conclusions. The results of own researches make it possible to execute control



by the process of training high-class goalkeepers, predict the level of their sports skill, outline the ways of improving these indicators in training process when training for top level competitions. The gained results provide handball experts with valuable information on the general tendencies of modern handball's development as well as on specific differences between the national federations in Europe.

Key words: handball, national teams, goalkeepers, competitive activity, efficiency of play, shots, saves.

Introduction. Today's handball is a fast athletic game characterized with quick change of gaming situations and a considerable variability of motion practical skills and abilities when achieving a positive result. In the course of its development, the game has undergone changes related to the needs of increasing the content and staginess of the game.

For the recent years, the interest in researching the athletes' competitive activity has grown. Most scientists note that competitions are the highest form of integral training leaning on the developed interrelations between the components of the female handballers' fitness level and the team players in the course of competitive activity [1, 4, 7, 14].

Each team player's activity has a specific focus. The handballers' motion activity during the game is not just a sum of individual hints of defense and offense, but a set of actions united with a common goal into a single dynamic system. The success of motion activity depends on stability and variability of skills, development level of physical qualities and the players' intelligence depending on their gaming position [5, 11].

The analysis of the parameters among the goalkeepers' competitive activity in the prominent national teams of the world and Europe makes it

possible to find optimal ways of training and providing success of technical and tactical actions in the course of the official international competitions [2, 9, 15]. The main problem of training highly qualified goalkeepers in handball is timeliness of achieving and preserving their optimal fitness level both in individual matches and during the whole competitive tournament [6, 8, 12, 13].

Various gaming models can have a different impact on the result of the game. It will make it possible to identify positive and negative sides in training goalkeepers and improve the competitive activity results further.

Connection of the work with research programs, plans, and topics. The work was completed in accordance with thematic plan of scientific researches of Prydniprovia State Academy on Physical Education and Sport for the years 2016-2020 by the topic «Theoretical and methodological basics for planning and control in sports games in the course of long-term improvement» (state registration number 0116U003012) and Composite plan of scientific-research work of Prydniprovia State Academy on Physical Education and Sport in the field of physical education and sport for the years 2021-2025, the scientific topic of the department of sports games: «Improvement of different



sides of the fitness level of the athletes specializing in sports games at different stages of long-term training» (State registration number 0121U108307).

The **aim of the research** is to analyze the play of the goalkeepers of women's national handball teams at the group stage of the European Championship 2020 and define the tendencies of the play's development.

Material and methods.

Participants. The play of the goalkeepers of the best women's national teams were analyzed, the participants of the 14th European Handball Championship in handball 2020 having qualified to the final European tournament 2020 and fought for the prestigious trophy.

Procedure, design. The data gained from the official protocols available on the European Handball Federation website (https://ru.wikipedia.org/wiki/Чемпионат_Європи_з_гандболу_серед_жінок_2020) [3]. The protocols include the information on the results of the 14th European Handball Championship among women's national teams at the group qualification stage, team rating, and goalkeepers' rating. This information was used to check the indicators of the goalkeepers' competitive activity and to compare and analyze its relationship with the team rating.

Methods of the research. Theoretical analysis and generalization of research and methodological literature and technical protocols on the Internet; method of system analysis; chronological method; methods of mathematical statistics.

Studying research and methodological literature made it

possible to formulate the problem, determine the relevance degree of the issues that were solved in the course of the research, and theoretically substantiate the paper's objective and tasks.

Mathematical statistics was conducted using the method of calculating quantitative and qualitative indicators of the goalkeepers' competitive activity, those being the participants of European Championship.

Results of the research and discussion. Women's national handball teams promote a great popularity of handball among youth. It is a complex sport, in which the players' individual indicators and important team tactical components are distinguished.

In recent years, the experts have been carefully studying the dynamics of goals in the top-level matches during all tournament stages since it is the team's success [10, 15]. The efficiency of the team's play and its chances to win the match depend on the goalkeepers' play in many respects.

The evaluation of the handballers' competitive activity and, particularly, the one of goalkeepers is important for monitoring the results and planning of training sessions. In the course of observing the best national team goalkeepers, the scientists found that each of them demonstrates their individual capabilities [6, 9].

In pedagogical researches, we analyzed 24 matches of group tournament, in the course of which the female handballers of 16 national teams completed 2168 ball shots on the opponents' goal out of which 1199 shots reached the target, the efficiency



accounts for 55.3 %. At group stage of the championship, these indicators account for (on average for the match) 90.3 performed ball shots on goal and 50.0 shots having reached the goal, respectively.

A handballer's technical arsenal can be evaluated by the frequency of using technical hints, their efficiency, and adequacy of decisions in various situations. A goalkeeper's positional play is built on the data of observing each player in many respects. Various information as well as the facts on particular qualities of a specific player, on their favorite ways of performing shots, and desirable goal corners can provide a considerable assistance to a goalkeeper in choosing the right tactics [14, 15].

In addition to the system of evaluating the indicators of the goalkeepers' gaming actions, we distinguished the technical and tactical actions possible to be used as indicators of their competitive activity's control:

- the number of saves from 6-meter line, winger positions, and the second offensive line (out of 9-meter line) while scripted offenses;
- the number of saves after a kind of fast attack as fast break and breakaway;
- the number of saves after 7-meter penalty shots.

At the previous group stage, 16 national teams had three matches in groups. 36 goalkeepers, two in each national team (except the Montenegro and Slovenia national teams, group «A», as well as Norway and Romania, group «D» where there were three goalkeepers engaged in the matches) took part in various matches as part of national teams.

Concerning the results, we

defined an even allocation of quantitative and qualitative indicators for teams' goalkeepers in some groups, while in the other groups an excessive discrepancy between these indicators was observed. This finds its proof in figures.

The gained results show that the total time spent in play by the goalkeepers varies. The national teams of Russia (group «B») and Norway (group «D») had equivalent goalkeepers in the team squad having spent 47.4% and 47.8%, and 31.8%, 31.9% and 32.4% of playtime on the ground, respectively.

It is worth denoting that the choice of a goalkeeper for a specific match or tournament depends on their fitness level in accordance with competitive activity requirements, high level of sports achievements, manner of play, and the opponents' fitness level. Thus, the goalkeepers of the national teams of Czech Republic Petra Kudláčková (group «B»), Croatia Tea Pijević (group «C»), and the Netherlands Tess Wester (group «C») spent the most playtime on the ground almost without substitutions, – 95,3%, 96,8%, and 94,6%, respectively.

In the other national teams, all goalkeepers had an opportunity to take part in matches with different percentage of playtime depending on various reasons.

A goalkeeper's competitive activity consists of technical and tactical actions in the goalkeeper's area – these are quick solitary moves. They perform defense handling the ball and organize the attack passing the ball to field players. Determining the indicators of the goalkeepers' competitive activity, it is worth noting



the general efficiency of saves.

The researches show that the average indicators of general efficiency of saves at the qualification group stage of the European Championship 2020 accounts for 30.2 %. High efficiency was demonstrated by the goalkeepers of the national teams of France: Cléopâtre Darleux – 46.7% (had 25.3% of playtime in three matches, performed 14 saves out of 30 shots), and Amandine Leynaud – 41.4% (68.4% of playtime, 68 shots, 24 saves); Norway: Rikke Granlund – 43.8% (31.8% of playtime, 32 shots, 124 saves) and Katrine Lunde – 42.9% (32.4% of playtime, 35 shots, 15 saves); Czech Republic: Petra Kudláčková – 36.2% (95.3% of playtime, 116 shots, 42 saves).

The following national teams' goalkeepers have low efficiency indicators: Adrianna Płaczek (Poland) – efficiency accounts for 5,3% (13.4% of playtime, 1 save out of 19 shots), Emily Sando (Norway) – 10.0% (31.9% of playtime, 3 saves out of 30 shots); Isabell Roch (Germany) – 16.7% (23.4% of playtime, 5 saves out of 30 shots); Viktoriya Kalinina (Russia) – 19.6% (47.4% of playtime, 9 saves out of 46 shots).

The shots from winger positions are the most complicated element of technique both for the players of offense and for the goalkeepers. Let us see how the goalkeepers of the examined teams dealt with it.

As a result of the conducted researches, based on the analysis of competitive activity it is worth noting high performance of saves by the national teams' goalkeepers, specifically, from the winger positions. Their average indicator at the group

stage accounted for 30.3%.

Thus, the efficiency of the goalkeepers' saves from the winger positions fluctuates within: from 62,5% – Althea Reinhardt (Denmark – 16.4% of playtime on the ground, performed 5 saves out of 8 shots), 52.8 – Branka Zec (Slovenia – 30.2% of playtime, 7 saves out of 13 shots), 45.0% – Jovana Risović (Serbia – 39.1% of playtime, 9 saves out of 20 shots), 44.8% – Blanka Bíró (Hungary – 71.3% of playtime, 13 saves out of 29 shots) to 0% – Viktoriya Kalinina (Russia – 47.4% of playtime), – Isabell Roch (Germany – 23.4% of playtime), – Adrianna Płaczek (Poland – 13.4% of playtime) all out of 5 shots reached the goal, 10.5% – Amra Pandžić (Slovenia – 51.7% of playtime, 2 saves out of 19 shots), 12.5% – Melinda Szikora (Hungary – 21.4% of playtime, 1 save out of 8 shots).

Ball shots at the goal from 6-meter distance are the best way for the team when finishing the attack what the whole positional rally is for. The number of shots from closer distances reflects the number of grave mistakes committed by the players of the defense who can only hope for their goalkeeper's skill and luck when performing saves.

In this component of competitive activity the goalkeepers of the following national teams demonstrated high efficiency: Rikke Granlund, having saved 100% shots (Norway, 1 shot 1 save), Marta Batinović – 45.5% (Montenegro, 5/11, respectively), Anna Sedoykina – 42.9% (Russia, 3/7, respectively). The goalkeepers of the following national teams demonstrated lower efficiency indicators: Blanka Bíró – 7.7% (Hungary, 1/13,



respectively), Weronika Gawlik – 9.1% (Poland, 1/11, respectively), Tea Pijević – 9.1% (Croatia, 1/11, respectively), Petra Kudláčková – 11.1% (Czech Republic, 1/9, respectively).

The general percentage of long-distance shots' saves (9-meter and more) constituted 40.6% among women's national teams (the goalkeepers had 188 saves out of 463 shots). Almost all the national teams' goalkeepers demonstrated high efficiency level. Thus, one third of the teams' goalkeepers have high indicators: Cléopâtre Darleux – 71.4% (France, 5 saves out of 7 shots), Mercedes Castellanos – 70.0% (Spain, 7/10, respectively), Petra Kudláčková – 69.0% (Czech Republic, 20/39, respectively), Ljubica Nenezić – 60.0% (Montenegro, 3/5, respectively), Dinah Eckerle – 58.8% (Germany, 10/17, respectively), Rikke Granlund – 57.1% (Norway, 4/7, respectively), Tea Pijević – 56.3% (Croatia, 9/16, respectively); the others have 30% and lower: Jovana Risović – 30.8% (Serbia, 4 saves out of 13 shots), Viktoriya Kalinina – 25.0% (Russia, 6/24, respectively), Katarina Tomašević – 25.0% (Serbia, 5/20, respectively), Emily Sando – 11.1% (Norway, 1/9, respectively).

The analysis of the goalkeepers' competitive activity when performing saves from 7-meter penalty shots indicates that their efficiency at the group stage of the European tournament accounted for 21.1% (175 shots were put, and 37 were returned by the goalkeepers). Considering the performance of saves from 7-meter shots we should note that their high efficiency is observed among the

goalkeepers: Maja Vojnović – 100% (Slovenia, 1 save – 1 shot), Cléopâtre Darleux – 75.0% (France, 3/4), Katrine Lunde – 75.0% (Norway, 2/3), Iulia Dumanska – 50.0% (Romania, 4/8), Blanka Bíró – 50.0% (Hungary, 3/6), Melinda Szikora – 50% (Hungary, 1/2), Denisa Dedu – 50.0% (Romania, 1/2).

Among 14 goalkeepers of national teams, the full equality in efficiency indicators is observed when performing saves from 7-meter penalty shots – 0% with 2 to 6 performed out of the put.

In the course of a fast attack with a fast break or a breakaway, the players have unlimited field of action for manifesting creative initiative – developed plan of rapid offense, peculiarities of organizing a fast break and breakaway, choosing the direction of moving and the way of passing the ball, and the moment of performing a shot on the goal. The goalkeepers, for their part, also have their action plan to prevent counterattacks to the shots after fast break and breakaway.

The average indicators of general efficiency of the attacks with fast break at qualification group stage of the European Championship 2020 accounted for 21.3% (the goalkeepers performed 35 saves out of 164 shots).

The greatest number of attacks with breakaway were performed to the goals of the following national teams: Poland – 22 (the goalkeepers managed to perform only 6 saves having demonstrated 27.3% of efficiency); Serbia – 18, 3, 16.7%, respectively; Romania – 17, 5, 29.4%; Slovenia – 15, 2, 13.3%; Germany – 14, 2, 14.3%; the Netherlands – 10, 3, 30.0%.

The equivalent indicators of competitive activity to the other



national teams' goals fluctuate from 4 (to the goal of France) to 8 (to the goals of Spain, Croatia, Hungary) attacks with breakaway, and from 0 (the goalkeepers of France, Montenegro, Czech Republic) to 3 (the goalkeepers of Sweden) saves, and the efficiency from 0% (the goalkeepers of France, Montenegro, Czech Republic) to 42.9% (the goalkeepers of Sweden).

At the group stage of the European tournament, after the attack with fast break the handballers performed 166 shots on their opponents' goals, and the goalkeepers managed to perform saves of only 44 of them accounting for 26.5% of their efficiency.

The most shots after fast break were performed to the goal of Serbia national team – 18. The national team's goalkeepers managed to neutralize 4 of them accounting for 22.2% of efficiency (Jovana Risović – played 39.1% of playtime, performed 3 saves out of 11 shots, the efficiency – 27.3%; Katarina Tomašević – 42.2%, 7, 1, 14.3%, respectively). Then we should note the Norway national team's goalkeepers having managed to eliminate the threat 6 times out of 16 equaling 37.5% of efficiency, and the Romania national team's goalkeepers whose indicators constitute 4, 16, 25.0%, respectively. The other goalkeepers of the national teams were allocated as follows: Germany's goalkeepers – 20.0% of efficiency (3 saves out of 15 shots); Croatia – 33.3% (5/15); Czech Republic – 41.7% (5/12); the Netherlands – 45.5% (5/11); Poland – 18.2% (2/11); Spain – 9.1% (1/11); Hungary – 10.0% (1/10).

The gained data on the efficiency of the high qualification goalkeepers'

competitive activity is the orienting point in the course of improving and achieving high results, and it gives the trainers an opportunity to develop the efficient programs for training process and system control before the future competitions.

Discussion. At the moment, the number of competitions among handball clubs and at the level of national teams grows every year, and the sports qualification among the participants of such competitions constantly improves.

The scientists who conducted the researches on control and analysis of the handballers' competitive activity mention the need of considering the recent achievements in the theory of sport, determining the results of each stage of competitions aimed at improving the quality of control and management of the training process in the course of long-term improvement [1, 4, 6].

Boosting sports skill among handballers in general and goalkeepers notably, is a significant problem under current conditions of developing high performance sport. The experts in handball emphasize the increase of competition and social significance of games, victories, and achievements among prominent national teams in official prestigious tournaments [5, 11, 15].

A goalkeeper's play is a complex and responsible part of full-team's actions and determines its final success in many respects. As the prominent experts in training handball goalkeepers note, at the moment the play of goalkeepers in prominent handball clubs is getting a great importance. In training goalkeepers, the



most important module is training their ability to 'read' all the respective gaming situations [2, 10, 13]. The prominent national teams tactically wisely realize an improved option of substituting the goalkeeper with an additional field player. Over the recent years, the more specific requirements for every gaming position and individual offensive and defensive tactical actions were developed being different from each other, particularly, for the players of the first and second offensive lines as well as the goalkeepers' play.

Conclusions. The analysis of saves' efficiency among the prominent national teams will make it possible, on one hand, to be aware of model indicators of the play of the teams' goalkeepers, and, on the other hand, – to outline the ways of improving these indicators in training process when

training for the highest level competitions.

The results of own researches make it possible to execute control by the process of training high-class goalkeepers and predict the level of their sports skill.

The gained results provide handball experts with valuable information on the general tendencies in modern handball as well as on specific differences between the national federations in Europe.

Prospects for further research consist in further analysis of the competitive activity indicators of the main and final rounds at the European Championship 2020 for optimizing the process of long-term training based on theoretical analysis and experimental researches at the competitions of different level.

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