THE EFFECT OF TECHNICAL FAULTS ON THE FINAL RESULT IN TEAM HANDBALL

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Abstract:

Technical faults in the attack phase are the subject of this research, since they are relevant, in some extent, for the achievement of the maximal competitive success, i.e. they impact the final result. This transversal research has the goal to identify record and analyze technical faults which occur in the attack phase of top female team handball players. By analyzing, presenting and comparing the previously identified technical faults during the attack phase, it is possible to determine the demonstrated differences in the incidence and the effects of technical faults within the observed varied qualitative levels, as well as between these levels. The method used in this research is analytical and synthetic, while statistic methodology is used as an auxiliary method within the quantitative analysis. The observed sample is representative and comprises of the highest-quality (representative) selections of the V European Championship for Women in Denmark 2002. Sixteen selections were observed, with the total of 48 games they played.

Key words: *female handball players, competitions, success, variables, ANOVA*

INTRODUCTION

Handball is a complex and dynamic game in which they represented all the main forms of natural movement and where the majority of activities conducted in a relatively short time. It calls for a fair and quick thinking, and especially practice to perfection, both individual, and collective game. Component that significantly affects the quality of the game, and then the final result, is the technical skills of each player individually. In today's Handball Championship to a great extent given the attention, not the technique of handball, but the technique of players.

Term technique explains as "the science of the rules which should adhere to a work of art, skill or a trade, especially with respect to the use of mechanical means (for example in sport techniques of playing, swimming, etc.)." And that includes "ways of meeting the specific and the most rational movement in a certain range." In addition to

effectiveness and efficiency, as well as two related and important components, where they removed all superfluous movements, the author states that "it is a perfect technique that provides optimal conditions in which less energy consumption."

Technical errors were most represented in the phase of the attack. Handball attack is usually defined as the period of the game, which starts from the moment the team came into the possession of the ball, to the efficient completion of the action (achieving goals), or error which loses the ball. The attack is also the technical and tactical activity that is trying to outplay the opposing team defense to one of the players came to the opportunity to achieve goals. The main task at the stage of attack is to create favorable conditions for achieving the goal, while its implementation was the goal.

Errors in all sports games, and also in handball are almost always present and are an integral part of every game, at different levels of competition.

Whether and how to be represented, to a large extent depends on the stage of training of the technical elements and correct their adoption. In any case, always present and unavoidable. Handball game abounds the technical elements that are performed in one game. How handball is one of the fast and dynamic sports games, where many of the activities performed by large, i.e. maximum speed, and technical errors must be represented.

The final score in handball, as in any competition, represent the basic measure of the value of a team. One of the most important aspects, which greatly affect the final result of the match, the team is the ability to perform certain technical and tactical activities. The subject of this research are technical errors in the phase of the attack, which to some extent affect the attainment of maximum competitive performance, i.e. affect the final result.

During preparation of this study there was a need for relevant indicators and information that would complement the theoretical knowledge and practice that would provide significant results in the field of technical expressions. During the research used one main and several additional methods.

This transverse study has the aim to identify record and analyze the technical errors that manifest themselves under attack at the top handball. Analyzing, presenting and comparing the pre-identified technical errors in the phase of attack can be demonstrated to determine the differences in the expression and influence of technical errors within and between observations of different quality levels.

METHODS

As a basic, this study used empirical method applied to a representative sample. Use of this method realizes the possibility of viewing the success of team technical activities at the stage of the attack at the Fifth European Handball Championship for women in Denmark. The research came to a certain empirical facts, and therefore the results presented quantitative values.

The study used the analytic-synthetic method which provides conditions for the formation of complete image and rightness of the success at the stage of attacks inside the observed qualitative level.

As an auxiliary method used in quantitative analysis is a statistical method used. Statistical processing of technical-tactical activities in the phase description of the attack begins, which helps to some interesting phenomena and the results of this study make comparison of results. A quality selection of key features (variables) in the phase of the attack, as well as quality and selection of statistical procedures allows their proper interpretation.

The basic hypothesis of this research is: The Fifth European Championship for Women better placed team had a few technical errors in relation to the worse placed team.

The sample is representative and observations made of the highest quality (National team) for selection of the Fifth European Championship for women in Denmark (2002.). Observed were 16 teams that have played a total of 48 games.

At the held Fifth European Championship for women in Denmark participated 16 national teams and 48 games were played. The study analyzed all selections. Winners of four national teams of Denmark, Norway, France and Russia were played 32 games(each 8) and classified in the first level of qualitative research. The second qualitative level consists of national teams of Hungary, Yugoslavia, Romania and the Czech Republic who have played in seven games, while the selection of Austria, Slovenia, Germany and Ukraine played in 6 games. The four lowest placed a selection of Spain, the Netherlands, Sweden and Belarus played 12 games (each by 3) and the third observed qualitative level.

The sample analyzed in total units of observation (phase attack of a game looking for any team in particular) is 96.

This research consists of all the participants of the Fifth European Team Championships for women in Denmark, and therefore all played games. Access to quality analysis tied to the performance of technical activities under attack. In this study were extracted compared to the placement, three adequate qualitative level (best, medium and placed the lowest placed team).

The results obtained using the selected research instruments on the complete sample of cases were processed with descriptive statistics which uses: the arithmetic mean (M), standard deviation (S), coefficient of variation (V) and standard error of arithmetic mean (SM).

Hereby are defined the average values of all variables related to all teams that have performed at the World Championships in Denmark 2002nd

Table 1. Analysis of the total number of technical faults made
our winners at the EP team in Denmark 2002nd year.

Variables	M	S	Sm	V
TTF	16,4	2,2	1,1	0,13

Table 2. Analysis of the total number of technical errors
made per game, team, whose placement is V-XII at the
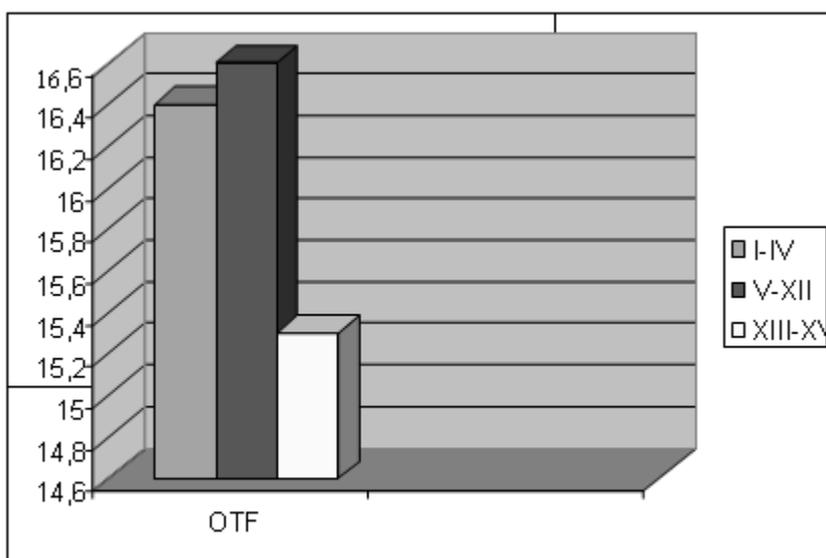*EP in Denmark 2002nd year.*

Variables	M	S	Sm	V
TTF	16,6	1,9	0,7	0,11

Table 3. Analysis of the total number of technical errors made
per game, team, whose placement is XIII-XVI at the
EP in the Denmark 2002nd year.

Variables	M	S	Sm	V
TTF	15,3	1,7	0,8	0,11

Table 4. Results of analysis of variance
with variable TTF

Placement	M	S
I-IV	16,4	2,2
V-XII	16,6	1,9
XIII-XVI	15,3	1,7
F	0,6	
P	0,5807	

year. (This is, among other things, the subject of research of this paper).

In addition to determining the average value, calculation of standard deviation and coefficient of variation obtained measures that represent a complete set of statistics.

The interpretation of the results of the statistical description of the team with different placement is introduced through the system variables. The system variables are describing the frequency of performance of technical errors.

RESULTS AND DISCUSSION

In the observed qualitative level it is evident that the first and third level (the most successful and least placed the selection) have the same number of games played. Accordingly, another qualitative level (from mid-table team) could be divided into two levels, within which would also be treated the same number of games played. However, for the purposes of this study three qualitative levels are viewed and presented where they analyzed the most successful, high placed, as well as a selection with the lowest actual placement.

Processing of the statistical data obtained by the results of which are divided into two parts. The first part was used for descriptive statistical analysis showing the results of the analysis of technical errors that affect the performance under attack. The second part of the results of the comparative statistical analysis is to show the totality of technical errors in the phase of attacks at different placement of teams.

Results of descriptive statistical parameters of national teams handball game, whose placement is I-IV are presented in tables.

Results of the fifth EP in Denmark referring to the total number of technical mistakes made, indicate their average value, i.e. arithmetic mean (M) analyzed in 32 games of this championship game is 16.4 (Table 1).

The coefficient of variation (V) for the observed variable TTF (Total Technical Faults) is extremely low and amounts to 0.13, from which it can be concluded that the total number of technical errors in the homogeneous placed team from I to IV places.

 Conclusion is that the best placed teams both made the same number of technical errors which confirms and finally achieved qualification for the European Championship.

Results of descriptive statistical parameters of national teams handball game, whose placement is V-XII are presented in tables.

Looking at the total number of technical errors in the fifth EP in Denmark calculated that the average value or arithmetic mean (M) played in 52 games is 16.6 (Table 2).

Using the coefficient of variation (V), which refers to the total number of technical errors calculated its very low value, based on which it can be concluded that all eight teams expressed extreme homogeneity.

From the submitted data we can conclude that the secondary placed team made approximately the same number of technical faults as realized and confirm the final placement.

Results of descriptive statistical parameters of national teams handball game, whose placement is XIII-XIV are presented in tables.

By observing the results of the EP-H in Denmark with regard to the total number of technical errors, it was noticed that the average value or arithmetic mean (M) any technical errors in 12 games is 15.3 (Table 3).

 Using the coefficient of variation (V), refers to the total number of technical errors in 12 games played in this championship, the following coefficient is very low. It can be concluded that all four teams expressed extreme homogeneity.

This is to be noted that the lowest placed team in the European Championship even made the same number of technical errors.

Comparative statistics procedure used for this is discriminative parametric procedure - Anova.

This statistical procedure is used in determining the average value of subsample from different quality levels. The data is shown in tables and graphs.

The analysis of variance compared the representative descriptive parameters (M) in relation to the total number of completed technical errors in relation to three separate qualitative level - the three groups defined by the placement team (Table 4 and Figure 1).

Given the low value of F test and the high value of the realized level of significance (p = 0.5807) observed that the teams from three different qualitative levels do not differ significantly in terms of total number of technical errors. It can be concluded that this element of the game was not a factor of discrimination between teams with different placement.

CONCLUSION

Observed results from this European Championship clearly indicate that different teams have placed approximately the same number of technical faults, i.e. the total number of technical errors did not affect the final ranking.

Obtained results concerning the technical faults made by teams placed at different points to their high expression of uniformity. From here it is possible to infer that the top, national teams' selections had almost identical number of technical errors, and their frequency did not affect the final result.

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ВЛИЈАНИЕТО НА ТЕХНИЧКИТЕ ГРЕШКИ ВРЗ КОНЕЧНИОТ РЕЗУЛТАТ ВО РАКОМЕТОТ

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Апстракт:

Предметот на ова истражуваање се техничките грешки во фазата на нападот кои во одредена мера влијаат врз остварувањето на максималната натпреварувачка успешност, односно на конечниот резултат. Ова трансферзалоно истражување имаше цел да ги идентификува, евидентира и анализира техничките грешки кои се манифестираат во фазата на нападот кај врвните ракометарки. Со анализата, претставувањето и споредувањето на претходно идентификуваните технички грешки во фазата на нападот, можат да се утврдат демонстрираните разлики при манифестирањето на тие грешки внатре и меѓу набљудуваните различни степени на квалитетот. Во истражувањето е користена аналитичко-синтетичката метода, додека во рамките на квантитативната анализа е користена статистичката метода. Примерокот на набљудувањето беше сочинет од најквалитетните (репрезентативните) селекции кои учествуваа на Петтото Европско првенство во ракомет кое се одржа во Данска (2002 година). Набљудувани се 16 репрезентации кои одиграа 48 ракометни натпревари.

Клучни зборови: *ракометарки, натпревари, успех, варијабли, АНОВА*