

ACCURACY IN FOOTBALL: SCORING A GOAL AS THE ULTIMATE OBJECTIVE OF FOOTBALL GAME

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Abstract: The study included 60 young football players aged 10 and 11 years with the aim to examine the influence of motor skills on a specific accuracy in football. The following tests for assessment of motoric abilities were used: Coordination: jumping over the horizontal rope, envelope test, figure „8“ with bending; Flexibility: forward bend-standing upper-body rotation-touch, the splits, side-stepping with a baton; Balance: standing on one leg along the balance bench, standing on one leg with eyes closed, flamingo test. Tests for specific accuracy in football included: elevational accuracy by foot - vertical target, elevational accuracy by foot - horizontal target, linear accuracy by foot - vertical target, the hits of ball by foot on the wall after it rebounds from the surface, elevational accuracy by head - vertical target and elevational accuracy by head - horizontal target. Results obtained by processing the data applying canonical correlation and regression analysis indicated the indisputable influence of motor abilities of young football players on the majority of specific accuracy tests.

Keywords: football, accuracy, motoric abilities.

1. INTRODUCTION

The result in football depends on psychomotor factors (strength, speed, endurance, flexibility, coordination and accuracy), psychological factors (cognitive, conative, social), incentive structure, teaching and training methods, variety of external factors (playground, referees, equipment, public etc.), and error factors. The most important factors are those of psychomotor abilities of the players, because the successful resolution of the situation in a football game is mainly

performed by motoric activities. During the game, better chances are on the side of those players who have these factors in optimal ratio. In the course of the training process with players, many factors can be effectively influenced, particularly the psychomotor ones, particularly on endurance, where the teaching and training methods are very significant for the process. The level of success in playing is highly affected by the environment as well as by the factor of chance. Football game with its variable, complex and unpredictable situations leads to the impact of coincidence on success. The higher the level of getting to know the coefficient of participation of the other factors the minor the errors (Gabrijelić, 1982).

The development of the football game is moving towards simplification and speeding up of all actions at all times and at every part of the field. The consequence of such an approach to the game are quick and accurate combinations, short and long passes (Dukic, 2000). Evaluation of space and time in these situations plays a very important role and points out an important basic-motoric ability of performing accurately targeted and dosed movement, which has long been considered to be a type of coordination. However, analysis of motoric area over the years of researching, led to a special factor, called accuracy.

The accuracy depends on the center for perception and its connection with the reticular system, and represents a sensitive motor dimension, because the results largely vary depending on the emotional

state of the person. The development of precision should start back in preschool age using a variety of basic games, especially those with the ball, where children are going to practise precision targeting various types of targets (horizontal, vertical, movable, immovable) (Stojiljkovic, 2003). The motor ability is manifested in two ways: accuracy by precision shooting - ejection of an object toward the goal (shoot the ball into the net, then the basket, service in volleyball, ejecting arrows in archery, shooting firearms); precision by targeting - directing an object or part of the body toward the target (punch or kick into the body of the opponents in the martial arts, hit in fencing). Nićin (2000) suggests a third type of specific accuracy and he believes that the final hit in individual sports (tennis, table-tennis, golf, etc..) does not fall into any of the familiar types of precision, as with eg. table-tennis player who goals the ball first, through a system of hand-racket, then comes into contact with the ball, and finally shoots at the given spot.

When this is applied to a football game, precision depends on accuracy of the game. If a player is not characterized by this ability, it is not likely for him to fit into any tactical conception. However, accuracy is not the only element that is required in accurate and prompt hit, passing the ball or shots. It largely depends on the level of adoption of technical elements, speed and performance of coordination of movements, but also of agility - football is a sport of agility (Weineck, 1999).

Therefore, it can be said that the accuracy comes as a final layer of good combination of physical, technical and tactical preparedness of players.

The idea of this study was to find out whether and how much a part of physical fitness of players affects the realization of tasks in which the emphasis is on accuracy in various situations when playing both by foot and head. Accordingly, as accuracy is

an essential element in the final outcome of football matches, this research was carried out in order to examine the influence of motoric abilities on specific accuracy in football.

2. WORKING METHOD

The study included 60 young football players of 10 and 11 years old.

Tests for motoric abilities:

Coordination: jumping over the horizontal rope - JHR, envelope test - ET, figure „8“ with bending - FIG„8“;

Flexibility: forward bend, standing upper-body rotation, touch - FBSRT, the splits - SPLITS, side-stepping with a baton - SSWB;

Balance: standing on one leg along the balance bench - SLB, standing on one leg with eyes closed - SLEC, flamingo test - FLAM.

The tests were taken from Kurelić et al., (1975) and Šoške and Rađo, (1998).

Tests for specific accuracy in football: elevational accuracy by foot - vertical target - EAFVT, elevational accuracy foot - horizontal target - EAFHT, linear accuracy by foot - vertical target - LAFVT, the hits of ball by foot on the wall after it rebounds from the surface - HBFRS, elevational accuracy by head - vertical target - EAHVT and elevational accuracy by head - horizontal target - EAHHT.

All subjects included in this study were healthy and voluntarily gave their consent for testing and participation in the research for this study.

Canonical correlation and regression analysis were used for the processing of data. Ratios that show the significance (P - level) marked with (*) determine the level of confidence of 95% and (**) determine the level of confidence of 99%.

3. RESEARCH RESULTS

The next chapter presents the results of canonical correlation and regression analysis of motoric abilities and specific accuracy in football. Because of the large number of regression analyses that can be displayed in this two observed spaces, only the level of statistical significance is shown (P-level).

Table 1. Canonical correlational analysis

	<i>Can.R</i>	<i>Can.R²</i>	<i>Chi-sqr.</i>	<i>df</i>	<i>P-level</i>
0	.66	.44	81.37	54	.009**

Table 1 shows the results of testing the level of integration between the predictor system of motoric abilities and the criterion system of specific accuracy in football. One significant canonical correlation of the mentioned systems was defined at level $p < .01$, which is presented by the size of the canonical correlation coefficient ($Can.R = .66$), which turned into a significant function amounts $P\text{-level} = .009$. The coefficient of determination ($Can.R^2 = .44$) explains the percentage connection between the two sets, so that the influence of the predictor on the criterion is 44%. In the case of correlation of the predictor and criterion system there is a general factor that significantly

defines this area. The structure of canonical factor (Table 2) on the side of motor abilities indicates that the definition of this factor is mostly affected by standing on one leg with eyes closed (SLEC -0.79), standing on one leg along the balance bench (SLB -0.70), envelope test (ET 0.54) and jumping over a horizontal rope (JHR -0.40). The structure of canonical factors on the side of specific accuracy in football suggests that significant influence was observed in the elevational accuracy by head - vertical target (EAHVT -0.93) and elevational accuracy by head - the horizontal target (EHHT -0.55).

Table 2. Canonical factors

	<i>Root 1</i>		<i>Root 1</i>
JHR	-0.40	EAFVT	-0.07
ET	0.54	EAFHT	0.24
FIG„8“	-0.29	LAFVT	-0.38
FBSRT	-0.02	HBFRS	-0.08
SPLITS	0.19	EAHVT	-0.93
SSWB	-0.06	EAHHT	-0.55
SLB	-0.70		
SLEC	-0.79		
FLAM	0.11		

Table 3. Regression analysis of observed spaces

<i>Variables</i>	<i>EAFVT (p)</i>	<i>EAFHT (p)</i>	<i>LAFVT (p)</i>	<i>HBFRS (p)</i>	<i>EAHVT (p)</i>	<i>EAHHT (p)</i>
JHR	.002**	.030*	.016*	.627	.658	.231
ET	.357	.438	.395	.860	.157	.019*
FIG„8“	.666	.314	.263	.364	.156	.698
FBSRT	.251	.579	.991	.040*	.959	.829
SPLITS	.032*	.292	.634	.692	.469	.233
SSWB	.297	.585	.588	.793	.404	.157
SLB	.316	.342	.200	.413	.038*	.269
SLEC	.251	.738	.654	.470	.005**	.016*
FLAM	.604	.612	.686	.014*	.168	.006**
<i>P-level</i>	.021*	.157	.115	.039*	.015*	.002**

The results indicate a statistically significant effect of motoric abilities on

elevational accuracy by foot - vertical target (EAFVT .021), the hits of ball by

foot on the wall after it rebounds from the surface (HBFRS .039), elevational accuracy by head - vertical target (EAHVT .015) and elevational accuracy by head – horizontal target (EAHHT .002).

Individual level:

Jumping over a horizontal rope (JHR) significantly affects elevational accuracy by foot - vertical target (EAFVT .002), elevational accuracy by foot - horizontal target (EAFHT .030) and linear accuracy by foot - vertical target (LAFVT .016);

The envelope test (ET) significantly affects the elevational accuracy by head - horizontal target (EAHHT .019);

forward bend, standing upper-body rotation, touch (FBSRT) significantly affects the hits of ball by foot on the wall after it rebounds from the surface (HBFRS .040);

The splits (SPLITS) significantly affects elevational accuracy by foot - vertical target (EAFVT .032);

Standing on one leg along the balance bench (SLB) significantly affects elevational accuracy by head - vertical target (EAHVT .038).

Standing on one leg with eyes closed (SLEC) significantly affects elevational accuracy by head - vertical target (EAHVT .005) and elevational accuracy by head – horizontal target (EAHHT .016).

Flamingo test (FLAM) significantly affects the hits of ball by foot on the wall after it rebounds from the surface (HBFRS .014) and elevational accuracy by head – horizontal target (EAHHT .006).

4. DISCUSSION AND CONCLUSION

How many times have football matches which could be highly evaluated been played, but the only obstacle to these high ratings was that there were no goals scored? A large number of football experts could be seen at one place performing a handful of in detail tactically elaborated

actions but the ultimate goal of the football game was not achieved. Television commentators on this occasion usually say: "The nets stood still."

The beauty of football game without achieving its primary objective, the goal, is not complete. Regardless of all the moves that today's football idols of young generation show with ease, the final result is measured by the number of goals scored. No one remembers whether a team play better and nicer, whether statistical parameters were on its side or not, only the goals scored are to be remembered. Beautiful, less beautiful, attractive or not, achieved by accident or tactically created, it is important only to score more goals than the opponent. And to achieve this aim, each team must have an effective way of winning the ball, the successful organization of the offense, the opportunity of open shots and eventually scoring the goal with high efficiency (Luhtanen et al . 2001).

Organization of offense which results in shooting on goal, determines either the success or failure of a football team. The completion of each successful offense can be seen through the means of offensive tactic, and that is a shot on the goal. This aspect of football game is attached by utmost importance, both in training as well as in the very selection of forward players (Jankovic, 2006).

Goals scored, in previous research activities, were the largest identified component of performance in a football game. Analysis of goals and determination of the most appropriate strategy of attack, is the only precondition for quality and efficient competition in modern football (Acar et al., 2007) .

The top professional football requires accuracy of passing and kicking in both stronger as well as in weaker leg. Research of Nagasawa et al. (2011) at 20-years old football players, shows the lack of difference in different types of shots and passing between stronger and weaker leg. This conclusion is a feature of any top

player who needs technical knowledge to find solutions to each tactical situation. It is important within this context to point out that in real sport events high frequency of accuracy is substantially determined by range of technical and tactical knowledge (Švraka, 2003, Stone & Oliver, 2009) but also the level of preparedness of other physical parameters (endurance, strength, speed, coordination...), as an important segment for the development of successful football player (Rakocevic, 1996; Helgerud et al., 2001; Milenkovic et al., 2008; Milenkovic, 2010; Milenkovic, 2011).

As a conclusion of this study it can be stated on the basis of the presented results, that there is statistically significant correlation between motor abilities with the majority of parameters specific accuracy in football parameters with the tested group of young players.

It should be stated that statistical significance were observed both on multivariate and univariate levels of most tests of specific accuracy in football. This study rejoins the previous findings which indicate a large impact of motoric abilities on performance in football.

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