

# OPTIMIZING GAME PERFORMANCE OF JUNIOR MIDFIELD PLAYERS (17-18 YEARS OLD) BY DEVELOPING SPECIFIC FOOTBALL ENDURANCE

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**Abstract:** *In this research we started from the premise that the development of specific resistance will result in optimizing the game of midfield players (17-18 years old). The material presented deals with the influence of applying the proposed training program for the development of specific football endurance in the experimental group on performance of midfield players.*

**Key words:** *specific football endurance, game performance, midfield players, 17-18 years old, football.*

## 1. Introduction

The study of the specialty literature shows that the physical training is seen by specialists [5, 6, 7, 8, 9, 13], [14] as a set of procedures that ensures the functional capacity of the organism, the development of the basic and specific motor skills, the development of the morpho-functional indices, the improvement of motor skills and good health. Many specialists consider that physical training has two basic components: general physical training and specific physical training [2, 3, 4], [9], [11], and others add to those two the multilateral training [10], [12]. The study of specialty literature discriminates the fact that football specialists [1, 2, 3], [5], [9], [11], [13, 14] consider that specific physical training action systems should follow two paths: development of the combined motor skills that are specific to

football and enhancement of motor skills related to ball games, of footwork skills with or without the ball, in order to efficiently perform the technical and tactic actions required by the football match. Also, “the trials and norms from the system of selection must be correlated with the stage of preparation.” [7, p.132].

Buiac D. [1] claims that the modern and competitive football play requires remarkable general and specific strength and endurance (as foundation for physical fitness). He states that “if we take into account the simplest parameters of the football match, meaning 90 minutes’ effort, 10 to 12 kilometres parcourse, jumps and other proceedings, and so on, the role of endurance is clear. Although the general characteristic of the match is determined by speed, in both running and proceedings, we must not forget that fatigue depletes the physical potential.

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After sixty or seventy minutes of play, even the fastest or the most technical players cannot withstand competition without proper physical training.” [1, p.133].

Midfield players are becoming more and more important in the economy of the football match, be they central or offensive midfielders, due to their filed position and tasks in the game, both as attackers and defenders. Those findings have constituted the premise for this study on the efficacy of development of specific football endurance in the competing outcome of the players in these positions. “The technique is conditioned by the other components of the sports training, especially by the physical training.” [4, p.94].

## **2. Objectives**

The hypothesis of the research is that the enhancement of specific endurance of the junior midfielders will contribute to the optimization of the game performance.

In this respect the experiment was oriented in two directions:

- check the efficiency of application exercises to develop specific football endurance in optimizing physical and technical factor;
- check the efficiency of application exercises to develop specific football endurance on competitive performance enhancer.

## **3. Material and Methods**

The research was conducted on two junior teams from Brasov County: F.C. Brasov – the experimental group – and C.S.S. Brasovia – the control group. The research was carried on during three stages.

The first stage was the stage of research, when the specialty literature was studied, the research lines were designed, the tryout was organized and the specific football endurance training programme was developed.

The second stage, which took place from March to May 2011, concerned the preliminary experiment. This was the stage of initial testing and assessment of the competing game performance of the junior midfielders in the research group during the initial official matches.

The third stage concluded the experiment through assessment of the competing game performance of the midfielders from the groups participating to the basic experiment during the last official matches. As a last step, the data obtained throughout the research were processed and interpreted and the conclusions and proposals were formulated.

## **4. Results and Discussions**

In order to assess the game performance of the midfielders in both the experimental and control group, we followed through, based on the video analyses of the matches, and recorded in the observation protocol the following game parameters: accurate assists, overtaking opponents, shots on goal, ball rebounds and total distance covered in the match, during five initial and five final matches.

Regarding the game performance of the midfielders, the results obtained by analyzing the proposed game parameters are gathered in Table 1.

Table 1

*Mean values of parameters registered at experimental and control group midfielders, during the initial and final games*

No. Crt.	Parameters of game	Group of subjects	Initial games	Final games	t	P
			M ± SD	M ± SD		
1.	<i>Accurate assists (number)</i>	EG	107.50±2.51	116.95±2.31	3.79	<0.01
		CG	107.60±2.53	109.78±2.50	0.84	>0.05
	<i>T; P</i>	EG-CG	0.03; >0.05	2.11; <0.05	-	-
2.	<i>Overtaking opponents (number)</i>	EG	11.80±0.34	13.09±0.30	3.91	<0.001
		CG	11.90±0.35	12.17±0.33	0.77	>0.05
	<i>t; P</i>	EG-CG	0.20; >0.05	2.09; <0.05	-	-
3.	<i>Shots on goal (number)</i>	EG	2.55±0.15	3.06±0.11	3.64	<0.01
		CG	2.40±0.16	2.54±0.15	0.87	>0.05
	<i>t; P</i>	EG-CG	0.68; >0.05	2.74; <0.01	-	-
4.	<i>Ball rebounds (number)</i>	EG	16.79±0.53	18.84±0.46	4.02	<0.001
		CG	16.80±0.52	17.27±0.50	0.87	>0.05
	<i>t; P</i>	EG-CG	0.01; >0.05	2.31; <0.05	-	-
5.	<i>Distance covered (meters)</i>	EG	7858.00±220.05	8554.30±186.53	3.26	<0.01
		CG	7740.00±221.14	7955.92±210.07	0.97	>0.05
	<i>t; P</i>	EG-CG	0.38; >0.05	2.13; <0.05	-	-

EG=experimental group, CG=control group, M=average, SD=standard deviation, t=test Student, P=significance level, n=number of subjects

Note:

<b>P</b>		0.05	0.01	0.001
<b>t</b>	f=19	2.093	2.861	3.883
	f=38	2.025	2.713	3.570

With reference to the parameter **accurate assists**, in what concerns the difference between the average results of the experimental group at both initial and final testing, the “t” index computed at 3.79 is bigger than tabular “t” at threshold

of 0.01, showing significant differences between assessments. For the control group, the computed “t” is 0.84 which is smaller than the statistic “t” and thus showing insignificant differences between the testing sessions for P > 0.05 (Table 1, figure 1).

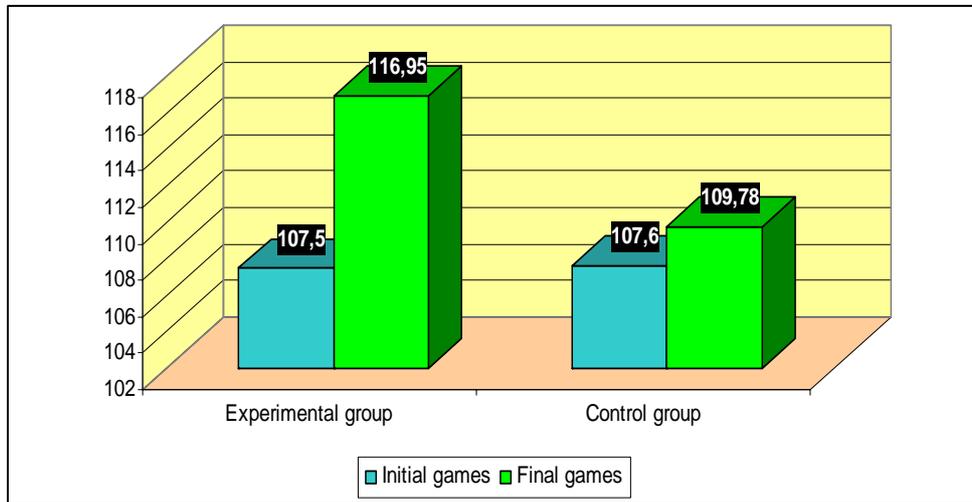


Fig.1. Dynamics of average values of the parameter *Accurate assists* registered for midfielders of the experimental and control group

For the parameter **Overtaking opponents**, the comparison between the results of the initial and final assessment of the experimental group points out significant difference between testing sessions, as computed “t” has the value 3.91, higher than tabular “t” for the

threshold smaller than 0.001. for the control group, the computed “t” is 0.77, smaller than the statistic value of “t”, showing insignificant differences between testing sessions for  $P > 0.05$  (Table 1, Figure 2).

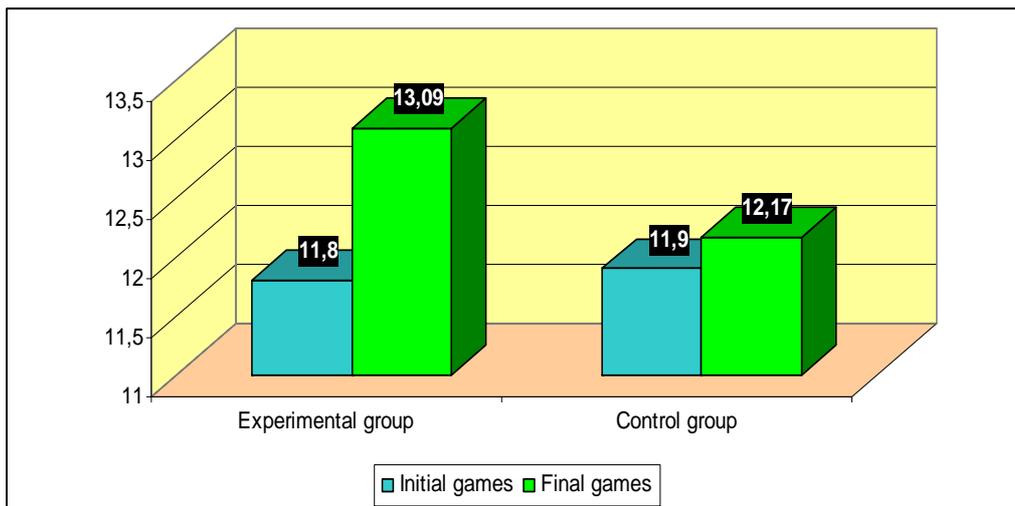


Fig.2. Dynamics of average values of the parameter *Overtaking opponents* for midfielders of the experimental and control group

For the parameter *Shots on goal* (Table 1 and Figure 3), midfielders from the experimental group made an average of 2.55 shots per match in the initial match, and for the control group the average was of 2,4 shots per match. After comparing the results, there is no significant difference between groups at this stage ( $P > 0.05$ ). In the final testing stage, the experimental group registered an average of 3.06 shots per match, comparing to the

control group, where the average was of 2.54 shots per match. The “t” variable for the experimental group is better, rising over the significance threshold ( $P < 0.01$ ), while the value for the control group is under the threshold ( $P > 0.05$ ), although the difference is statistically irrelevant. The average value of the “t” variable for the final match of both groups shows the statistically significant progress of the experimental group ( $t = 2.74$ ;  $P < 0.05$ ).

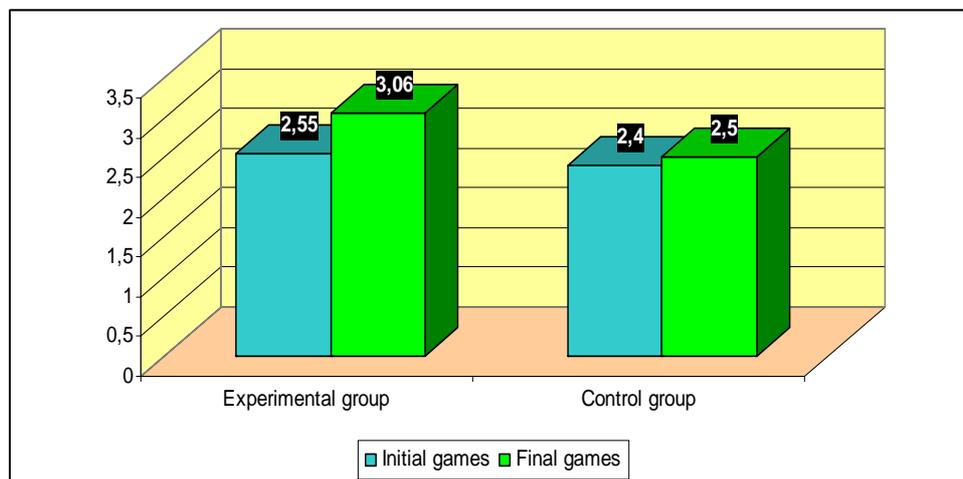


Fig.3. *Dynamics of average values of the parameter **Shots on goal** for midfielders of the experimental and control group*

The progress of the experimental group shown by parameters *Accurate assists*, *Overtaking opponents* and *Shots on goal* is obvious. This result is based on the growth of the specific football endurance by means of specific training methods which enact the corresponding offensive play. This type of training was focused on drills to increase the quantity of accurate shots on ball, to improve the physical fitness of the active midfielders involved in the tactical game, to support ball possession by multiple marking strategies,

overtaking opponents, to make opportunities for numeric superiority and filling in for shots on goal.

For the parameter *Ball rebounds* the value of computed “t”, referring to the difference between the initial and final games, is 4.02, higher than tabular “t”, which is under the threshold of 0.001, proving the significant difference among rounds. For the control group, the value of “t” does not indicate notable difference between testing sessions, for  $P < 0.05$  (Table 1, Figure 4).

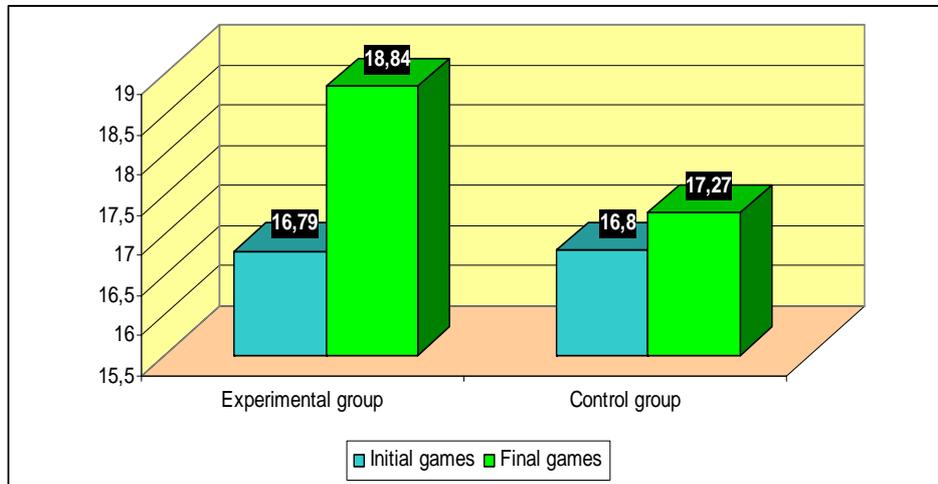


Fig.4. Dynamics of average values of the parameter **Ball rebounds** for midfielders of the experimental and control group

Comparing the average results obtained by midfielders for the parameter **Distance covered**, we can see that in the initial game the average for the experimental group is of 7858 m., while the average for the control group is 7740 m. The computed “t” variable ( $t = 0.38$ ,  $P < 0.05$ ) shows that for this parameter there is no statistically significant difference between the two

groups, therefore they are homogenous (Table 1 and Figure 5).

Analyzing the results registered in the final matches compared to the initial ones, we found that for the experimental group there is significant statistic threshold difference for  $P < 0.01$ , while for the control group the threshold value of “t” is lower than 5% ( $P < 0.05$ ).

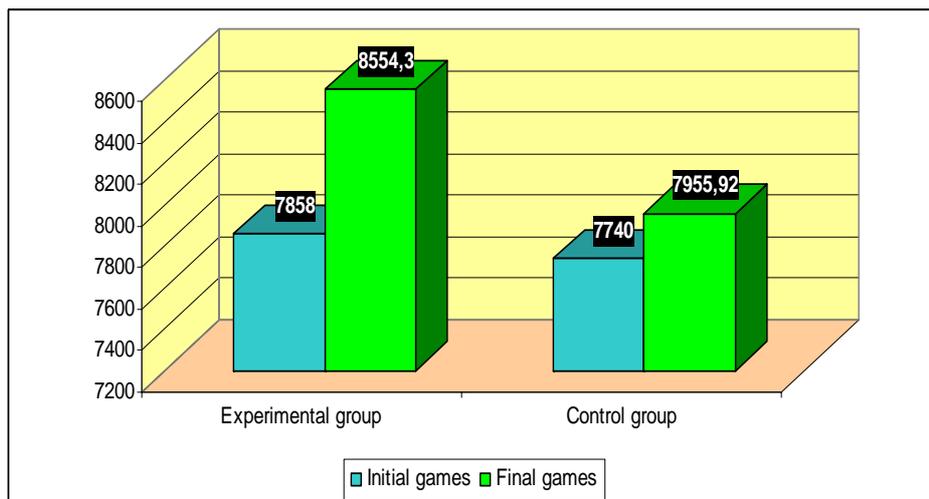


Fig.5. Dynamics of average values of the parameter **Distance covered** for midfielders of the experimental and control group

In terms of progress, the growth rate of the experimental group is higher than that of the control group. It can be stated that the significant growth shown by the parameters of the experimental group as compared to those of the control group stress the positive effect of the training programme on the qualitative and quantitative improvement of physical strength and specific endurance.

### 5. Conclusions

In conclusion, the comparative analysis of the values of the recorded game parameters of the midfielder groups that took part in the pedagogical experiment confirms the fact that the evolution of the experimental group is noticeable as reported to the control group ( $P < 0.01$ ,  $P < 0.001$ ). This fact allows us to state that the research hypothesis is confirmed and that the training methods used for the optimization of the specific football endurance were verified during official matches.

As a result of the theoretical and practical undertaking of the pedagogical experiment focused on the enhancement of junior footballer specific endurance the following recommendations arise:

- Drawing of adequate programme which should optimally systematize and phase the training objectives, indices, methods and means together with a strict register of the activity
- Paying special attention to enhancement of players' endurance, which should become priority objective of the physical training
- Making the players theoretically conscious of the importance of their physical progress, including the practical significance of the optimization of endurance for their competitive status.
- Making use of emulating and attractive training methods and means to

help the players' training process improve the duration of intensity of their effort; selection and implementation of endurance enhancing action systems to facilitate solving concrete offensive play situations

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