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Original article

FUNCTIONAL TRAINING IN MAINTAINING THE PHYSICAL PREPARATION VOLLEYBALL PLAYER

COJOCARU Adin Marian¹, COJOCARU Marilena¹

Abstract*

Aim. The purpose of this research is to improve the physical condition of junior volleyball players by selecting the means of control, design and implementation of training programs tailored functional. The importance of this study is to design an exercise program tailored to functional training, which will influence positively the overall physical and motor development and functional capacity of volleyball players at the junior level.

Methods: In order to optimize physical training volleyball players, juniors, and optimum use of performance capacity, we conducted an experiment based on the use in the national team training, a tailored program of functional training. Thus, intervened on the programming and planning of training athletes were established tests, samples and measurements in order to highlight the appropriateness and effectiveness of using these means.

Results: Progress group experiment is due to the methodology developed and implemented new motor that influenced positively the expansion. Exercises for flexibility development group implemented the experiment proved to be more efficient than those used by the control group. An important contribution was played with TRX exercises and stretching exercises performed both at the beginning and at the end. Trends in last period on obtaining high quality technical executions at junior volleyball requires technical and tactical component besides a good physical training that is based on supporting the performance and efficiency was

Conclusions: After analyzing the data obtained in the tests was confirmed and the specific hypothesis of this research: the selection and adaptation methods and means to improve the physical training integrated into a training program consistent at the level of players volleyball, junior influences positive and their functional motor ability, greater than through traditional training process.

Keywords: functional training, volleyball, physical preparation, juniors

Introduction

Volleyball is one of the recreational sports, competitive, popular and successful among sports fans. Due to progress made in recent years regarding the preparation, volleyball has reached a level of craftsmanship and spectacular high.

„Current efforts are organizational, so winning a large number of investors and development programs designed to attract major financial funds for the purposes of sports activity.” (Păcuraru et al., 2000, p.11)

„The Volleyball, sport olympic, with the highest number of national federations affiliated to the FIVB, achieved in recent years, a high level of craftsmanship and spectacular due to progress made in the preparation and at the major competitions nationally and international.” (Grapă, Mârza, 1998, p.9)

Men's coach of Brazil, world champion Bernardo Rezende, emphasizes that playing volleyball has become increasingly faster and

matches should be prepared in advance. (FIVB 2002, p.2)

A major goal of the current phase is the development of new strategies and systems modeling training and skills and qualifications of coaches and officials.

The content and methodology of training juniors (17-18 years old) is focused both on participation in the Junior National Championship as well as the individual trained athletes (Muresan, 2005, p 68).

At this stage it can finalize the vast majority (60-70%) functional model of post players on each team separately.

The recent trends on obtaining high quality technical executions at junior volleyball requires technical and tactical component besides a good physical training that is based on supporting the performance and efficiency was in game (Cojocaru, A si colab. 2013, p 45).

The practice has the effect of harmonization

¹Faculty of Physical education and Sport, Spiru Haret University, ROMANIA

E-mail address: adincojocaru@yahoo.com

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of functional training focusing on physical characteristics required from the players Volleyball: high allure, toned muscularity, well defined and outlined.

Hypotheses

In setting out preliminary research hypothesis the assumption that the selection and implementation of the proposed program, emphasized by driving tests, will help to improve fitness.

Suppose implementing a functional training program, adapted to the specific game of volleyball, generate better long-term fitness level junior volleyball players.

Methods

- ⇒ Literature study method
- ⇒ Observation method
- ⇒ Method tests and measurements
 - Tests designed motor capacity
 - Tests aimed at developing functional capacity
- ⇒ Method pedagogical experiment
- ⇒ Statistical and mathematical method of processing and interpretation of data
- ⇒ Method graphic representations

In order to optimize physical training volleyball players, juniors, and optimum use of performance capacity, it conducted an experiment based on the use in the national team training, a tailored program of functional training.

Thus, intervened on the programming and planning of training athletes were established tests, samples and measurements in order to highlight the appropriateness and effectiveness of using these means, during February 9, 2015 - 1 April of 2015 to Dej.

The main tasks of the preliminary research:

- ⇒ Periodization of research and establish the conditions for the experiment;
- ⇒ establish specific training objectives;
- ⇒ designing an exercise program tailored to functional training;
- ⇒ establish initial test and control samples;
- ⇒ implementation of functional training program adapted;
- ⇒ conducting final tests;
- ⇒ statistical and mathematical processing of results from initial tests;
- ⇒ drawing conclusions

The research included two samples consist of:

1. Group experiment includes 12 athletes from the national team of Romania.
2. Control group includes 12 athletes Sports Club LAPI Dej, junior.

Table nr. 1 – Composition of s experiment and control group

GROUP EXPERIMENT				GROUP CONTROL		
Nr crt	Name	Position	Age	Name	Position	Age
1	C.F.	R	18	V.A.	R	18
2	A.A.	E	18	O.O.	U	18
3	M.M.	L	19	J.A.	U	18
4	I.R.	U	17	L.S.	E	19
5	C.I.	E	18	I.A.	C	18
6	S.I.	C	19	D.E.	R	18
7	R.E.	C	17	B.A.	E	17
8	R.T.	E	18	M.R.	C	18
9	S.R.	E	18	F.F.	C	18
10	C.O.	U	18	C.I.	L	18
11	M.T.	C	18	I.A..	L	18
12	S.A.	R	19	D.A.	C	17

Methods and processes to improve the general motility were used in preliminary research:

Method efforts explosive-type (power training)

This method aims to develop force under the speed (expansion).

The method involved performing all the exercises and repetitions in speed, loads used in this method were between 75-95% of possibilities 6-8 series 3-6 repetitions (high heart rate reaches 190-200 beats / minute).

Breaks between exercises were 2-3 min. and between sets of 3-5 minutes. Following the pulse pauses returned to baseline.

Work method in circuit

Work involves performing sequential circuit of exercises for developing strength in combination with strength. During these training athletes went from a workshop to another.

The Method Interval training (Intensity interval training) is a training method that is based on the idea that increasing the pulse rate in some additional benefit for health but at the same time is

difficult and sometimes tedious to maintain this rate for long periods.

Plyometric training

Plyometric exercises (Plyometrics) is used to produce fast and powerful movements to improve nervous system functions (reaction time of muscles) and to improve athletic performance.

The tests that were subjected to athletes during the preliminary research:

- Evaluating the potential motor:
 - Sargeant Jump
 - Frontal flexibility
- Evaluation of functional capacity:
 - test Ruffier

Interpretation of results

The data collected from this test, which gives us information about the detent in the upper limbs, under anaerobic are presented in figure 1.

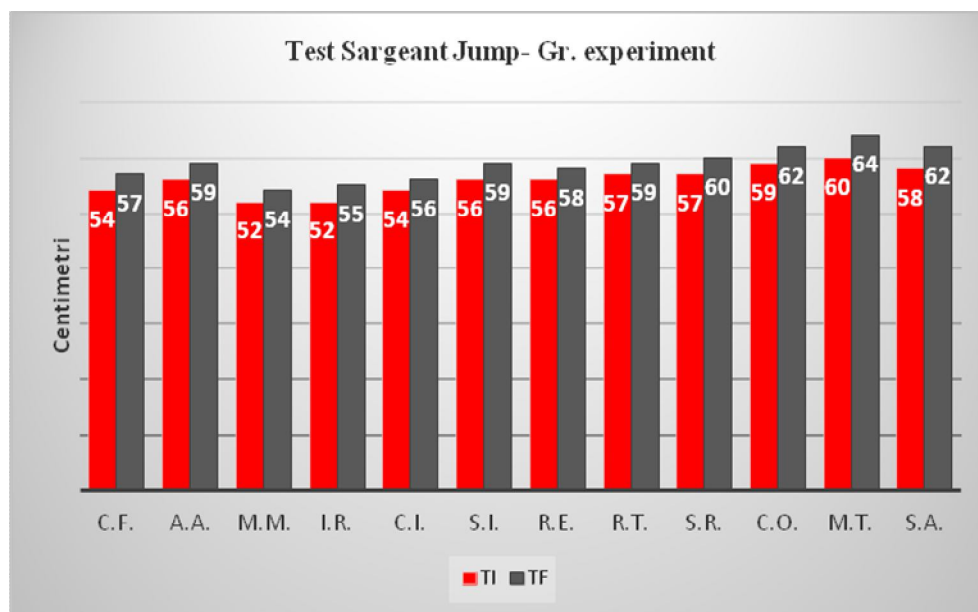


Fig. 1 – Graphical representation of results to the sample Sargeant jump - group experiment

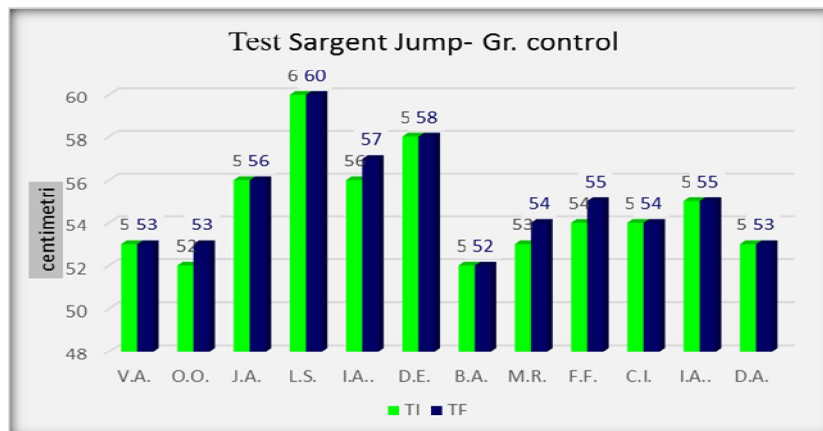


Fig.2 – Graphical representation of results to the sample Sargent jump - group control

Group experiment has succeeded sample Sargent Jump vertical leap improvement in the arithmetic average of 2,83cm, arising from calculating the difference between the initial testing averages: 55.92 and the final testing of: 58.75.

Group control has succeeded vertical jump test jump Sargeant improved arithmetic mean of 0.33,

the difference between the initial testing: 54.67 and the final 55.

Progress group experiment is due to the methodology developed and implemented new quality motor that influenced the positive detent.

Table nr. 2- Statistical indicators for sample Sargent Jump

Groups	Indicatori statistici Testări	X	CV	t-Student	P
Group Experiment	Ti	55,92±0,73	4,17	2,50	0,02
	Tf	58,75±0,86	4,67		
	Difference	2,83			
Group Control	Ti	54,67±0,71	4,14	0,33	0,73
	Tf	55,00±0,68	3,97		
	Difference	0,33			

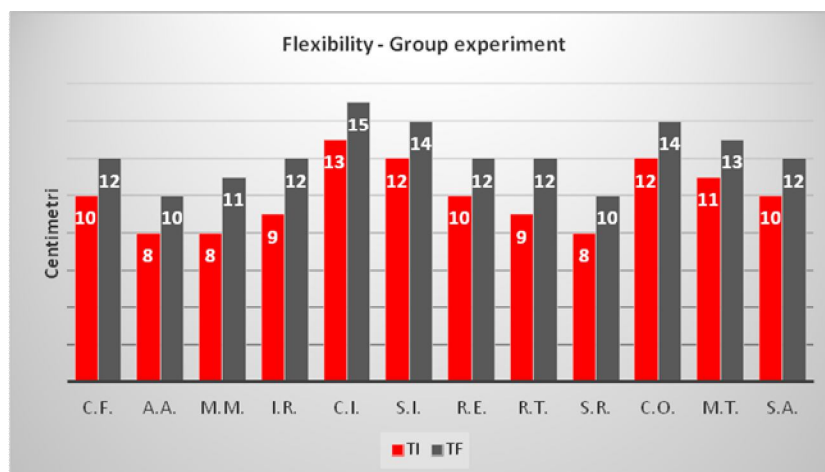


Fig. 3 - Graphical representation of results front flexibility in sample - group experiment

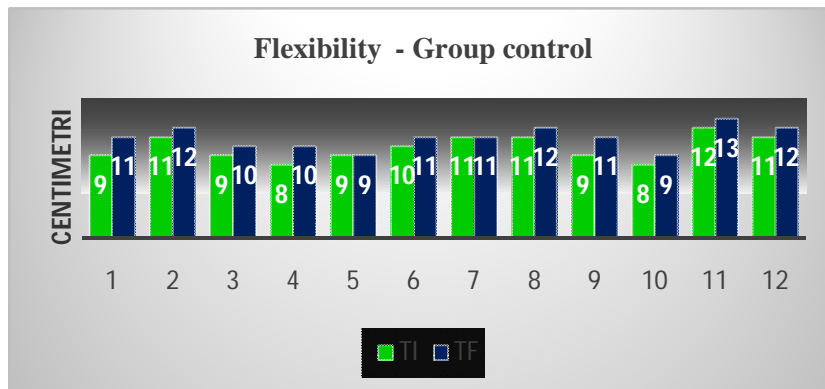


Figura nr. 4- Graphical representation of results front flexibility in sample - group control

In the group experiment is an increase in the value of the arithmetic mean of 2.25 cm between the two tests, the information in Table 9. On initial testing, the arithmetic average was 10cm, that the final testing to arrive at value 12.25.

In the control group, the progress was lower than experiment group, 1.08 cm difference resulting

arithmetic average of initial testing, 9.83, and the average value of final testing, 10.92.

Exercises for flexibility development group implemented the experiment proved to be more efficient than those used by the control group. An important contribution was played with TRX exercises and stretching exercises performed both at the beginning and at the end.

Table nr. 3 - Statistical indicators for sample frontal flexibility

Groups	Statistical indicators Tests	X	CV	t-Student	P
Group Experiment	Ti	10±0,49	16,32	3,38	0,002
	Tf	12,25±0,44	12,07		
	Difference	2,25			
Group Control	Ti	9,83±0,38	13,02	2,05	0,051
	Tf	10,92±0,35	10,88		
	Difference	1,08			

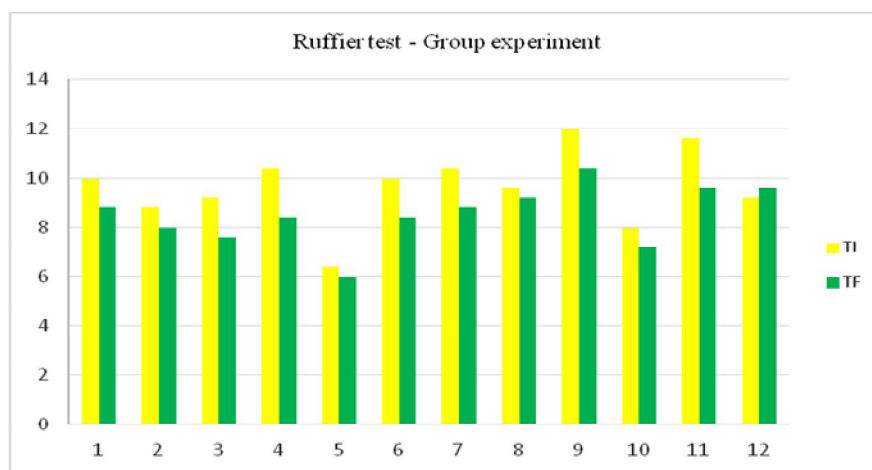


Figura nr. 5 – Graphical representation of results Test Ruffier - group experiment

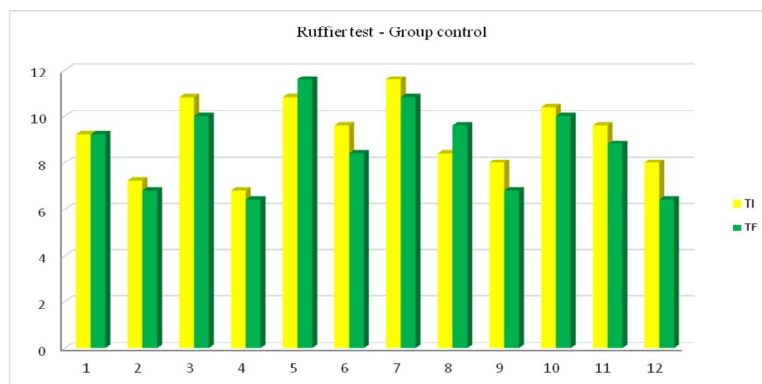


Figura nr. 6 – Graphical representation of results Test Ruffier - group control

Athletes group conducted an experiment to improve the arithmetic mean value of 1.13, value obtained by calculating the arithmetic difference between the two tests: initial and final (TI = TF = 9.63 and 8.5)

Athletes control group showed a difference arithmetic average value between initial and final testing 0.46 (TI = 9.2 and TF = 8.73).

Table nr. 4 - Stastical indicators for sample Ruffier test

Groups	Statistical indicators Tests	X	CV	t-Student	P
Group Experiment	Ti	9,63±0,43	1,38	2,03	0,05
	Tf	8,50±0,34	1,09		
	Difference	1,13			
Group Control	Ti	9,20±0,44	1,28	0,74	0,46
	Tf	8,73±0,51	1,58		
	Difference	0,46			

Discussions

The recent trends on obtaining high quality technical executions at junior volleyball requires technical and tactical component besides a good physical training that is based on supporting the performance and efficiency.

On the volleyball players, juniors, physical training is the first component that the focus is to create motor-functional support specific effort to support this sport (Şerban, 1999, p 78).

Physical training objectives pursued "maintaining the rules motive indicators of development of each individual, body hardening methods and means diverse body recovery means and methods in natural environments, capacity building to the level required for driving social model". (Bondoc-Ionescu, 2008, p.7)

Functional training programs (functional training) aim the optimization of physical and functional capacity of athletes, but also prevention and rehabilitation after injuries suffered.

Practicing functional training can prevent injuries or muscle disorders, bone and joint in greater

than classical training at the gym equipment classic.

Physical training in volleyball requires the development of basic and specific motor skills, physical development and prepare joints and harmonious important segments volleyball (Mârza, 2006, p.168).

Conclusions

Following deployment approach operational main conclusion drawn is that the general assumption preliminary ruling was confirmed namely that the selection and implementation of a program of functional training adapted to the specific game of volleyball, revealed by tests motive will cause improving the fitness of the players of volleyball at the juniors.

After analyzing the data obtained in the tests was confirmed and the specific hypothesis of this research: the selection and adaptation methods and means to improve the physical training integrated into a training program consistent at the level of players volleyball, junior positively influence the



ability and their functional motor, to a greater extent than through a traditional education process.

The variety of methods, means and specific training will determine functional capacity optimization and functional motors volleyball players.

Programs adapted to functional training, will determine and inspire among junior volleyball players a more active participation, due to large variety of ways to act, as well as the attractiveness of their.

The conclusion after having conducted demarche realized is that it would be beneficial to continue studying this phenomenon ample related to the changes in somatic, motor and functional occurring from use in the preparation of programs adapted to functional training, in order to change plans old training at junior volleyball players, increase training at this level of pleasure.

Preliminary tests used in the experiment provides insight that can be completed with further experiments on groups of influence-functional motor.

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References

- Cojocaru A, Lăzărescu D, Ștefănescu A, 2013, Ghid orientativ al antrenorului de volei, București, pg. 45, www.frvolei.ro
- Fédération Internationale de Volleybal, 2002, Top Volley, Livret technique, Jeu, Techniques et Tactiques après les Championnats du Monde, pg.2
- Grapă F, Mârza D, 1998, Volei în învățământ, Editura Plumb, Bacău, pg. 9, 115
- Ionescu-Bondoc D, 2008, Bazele antrenamentului sportiv, Note de curs, Brașov, pg. 7,
- Mârza D, 2006, Volei, bazele teoretice și metodice, Editura PIM Iași, pg.168
- Păcuraru A, Iacob I, Balaiș F, Braharu O, 2000, Manualul profesorului de volei, Editura Helios Iasi, pg.11.
- Șerban M, 1999, Gândirea – Factor de optimizare a modelării. Volei; Editura Printech, București, pag 78.
- Mureșan A, 2005, Volei. Selecția și pregătirea echipelor de juniori, Cluj-Napoca, Editura Accent, pg.68.